PG AUGUST HIGHLIGHTS

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DIGITAL ADVANTAGE

In addition to the kick-butt stuff in our August 2012 print edition, you also get the following fantastic material when you head online to premierguitar.com.

Digital-Only Reviews:

DR1 AXL USA Bulldog AL-1090
DR3 Resonator Roundup
DR7 Floorboard Multi-Effects Roundup

Photo by Patrick Beaudry

QUEEN EXTRAVAGANZA

Guitarists Brian Gresh and Tristan Avakian take tips from Brian May.

STUDIO LEGENDS: KEN SCOTT

The recording legend holds nothing back as he takes us inside *Abbey Road*.

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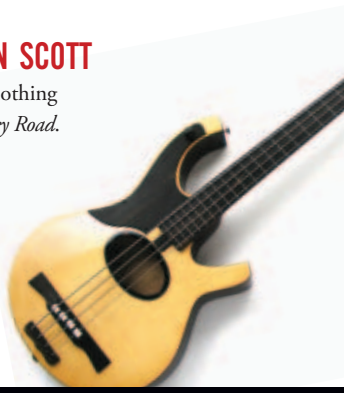

REVIEWS:

Fractal Axe-FX II • Cort Sunset 1 • Mike Lull JT5-24 • Crushsound Farmer's Mill • Hahn Model 1229 • Wren and Cuff Caprid • Scarlett Bass 200 • Mad Professor Golden Cello • 65Amps London • Budda Verbmaster • Carr Artemus • Dr. Z M12 • Fargen AC Duo-Tone • Goodsell Super 17 Black Line • Matchless Lightning 15 Reverb • Top Hat Club Royale • Vox AC15 Hand-Wired AC15HW1X

QUEEN EXTRAVAGANZA TOUR · PLUS! 9 DIGITAL-ONLY REVIEWS

AUGUST 2012

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THE Amp ISSUE

+ AMP FIRST-AID

Must-Know Tricks That Save the Day

8 EASY MODS

Safe Projects for Any Tube Amp Owner

17 GEAR REVIEWS

HAHN · 65AMPS · MATCHLESS · CARR · GOODSELL · WREN AND CUFF · MAD PROFESSOR · CORT · CRUSHSOUND · MIKE LULL · SCARLETT · FRACTAL

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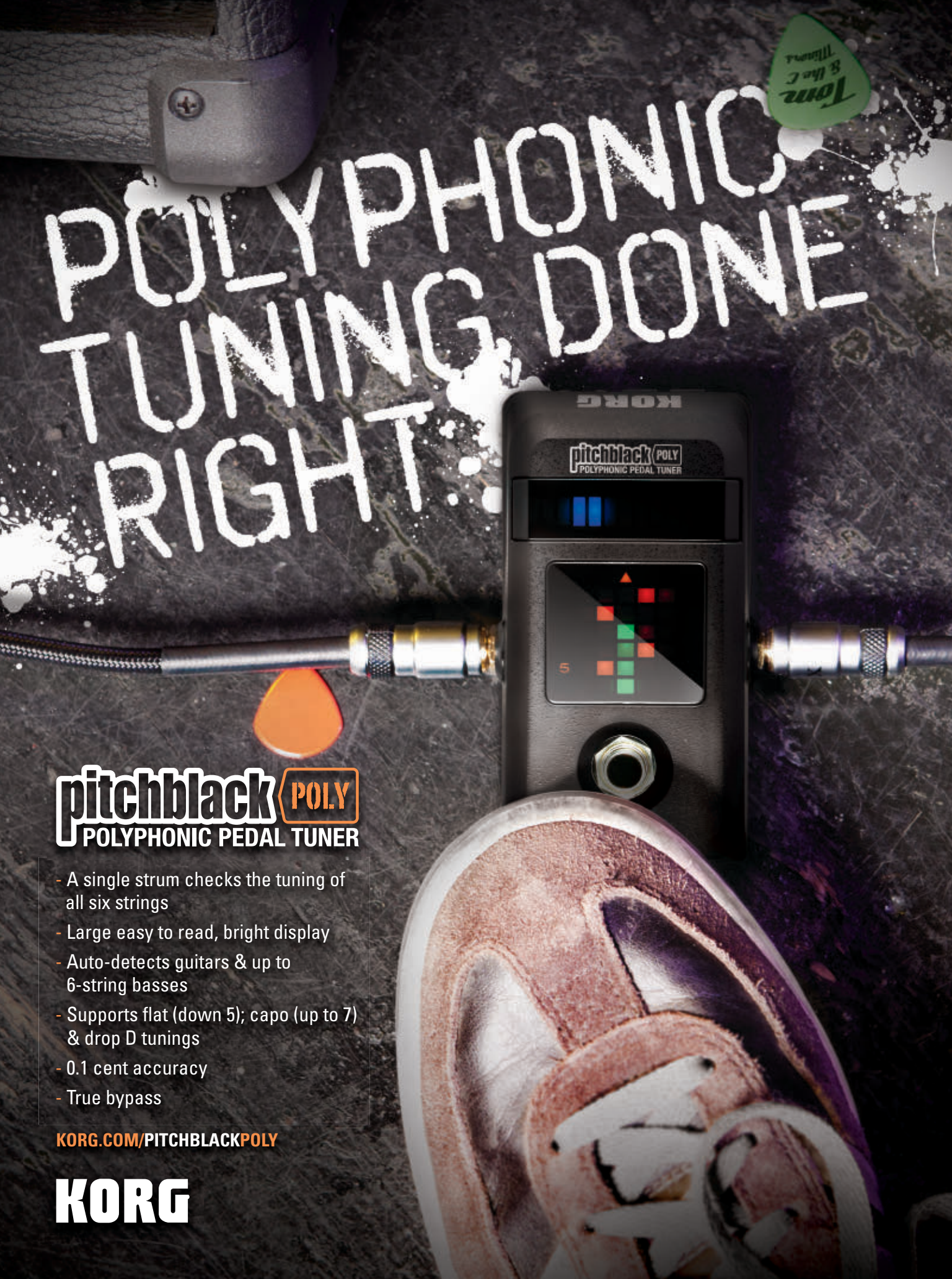
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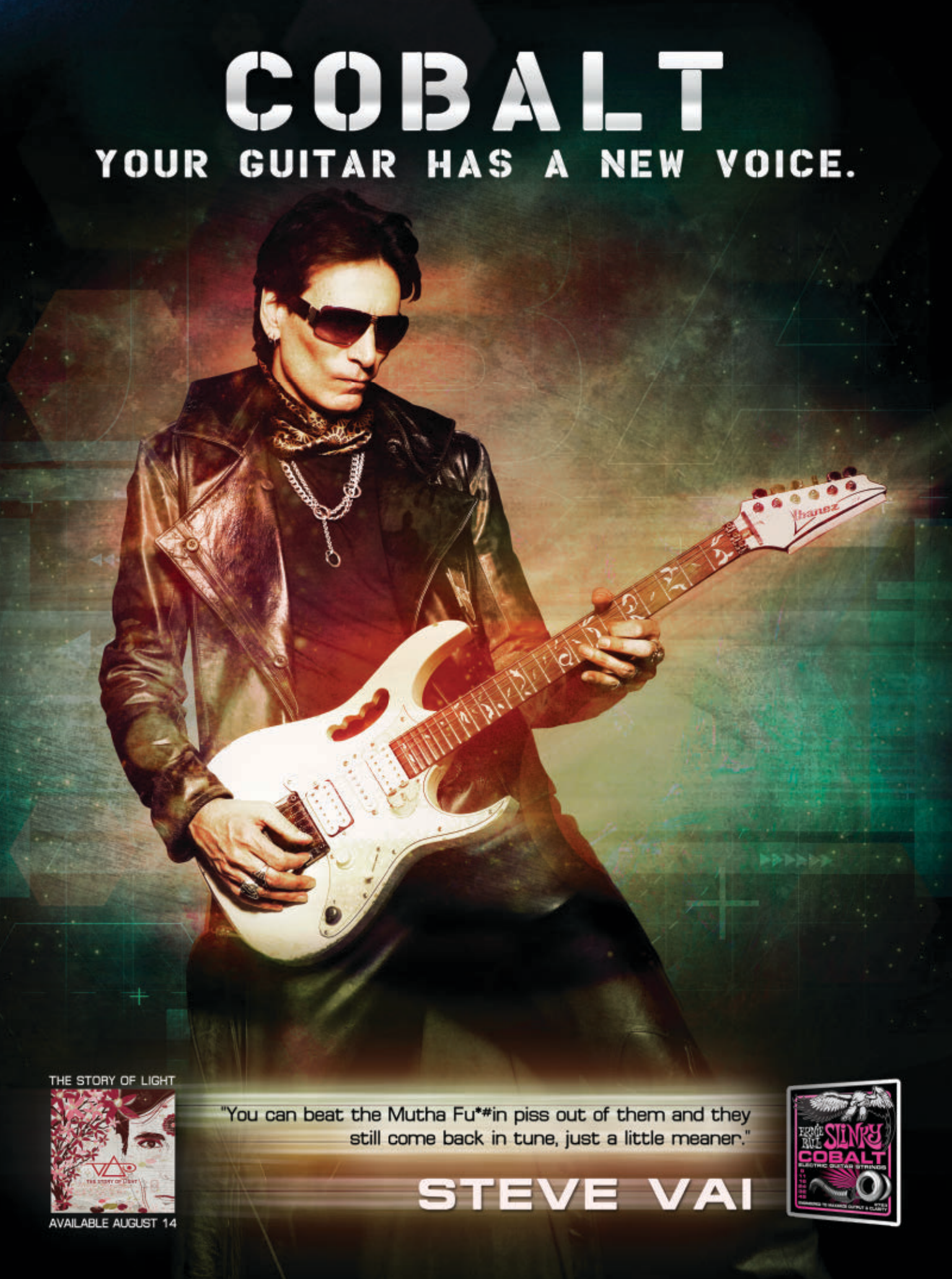

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A Stroll Down Amplifier Lane

BY SHAWN HAMMOND

This couldn't really be billed as an "Amp Issue" if I didn't go on and on here about amps, now could it? But I promise I won't blab too much about how an amp arguably does more for your tone than anything else in your signal chain. That's all true—after all, it's the last thing *in* that chain and it broadcasts the signal for all to hear—but what I want to do here instead is talk a little about the stories our amps tell. Because our gear choices *do* tell a lot, sometimes more after they're gone than when we have them.

My first amp was a little solid-state Peavey Backstage Plus 1x12 combo. The year was 1984, and the amp lasted less than a day. Not because it blew up or died, but because I'd purchased it at a big annual sale at Herger Music in Provo, Utah, where I'd also bought my first electric guitar—a two-knob 1983 Fender Strat. Mere hours afterward, the store had a drawing for a door prize and I ended up winning the grand prize, a solid-state Marshall Master Lead Combo. I was 12 and had begun playing acoustic guitar a year before, which ticked off the older second-prize winner (he got a Tom Scholz Rockman Soloist) to *no end*. He'd played for years, and there I was—this skinny little kid, a foot or two shorter—stealing the cooler prize away. And to add injury to insult, my bandaged-up broken thumb (caused by a gnarly attempt at Evel Knievel-style BMX biking) made it impossible to play for a while—yet more reason for the runner-up to scowl.

The people who ran Herger were cool enough to let me return the Peavey, and for the next couple of years that Marshall broadcast my stilted, out-of-tune, rhythmically challenged parts in my first band—an originals power trio with very little in the way of actual power. The concept of master volume versus standard volume knobs was somewhat foreign to me then, because I didn't really know anyone else who played guitar except my teacher at the music shop.

And don't even get me started on tubes. My mom had thought the salesman was trying to liquidate old, outdated inventory when he suggested a valve-equipped model, so her gut reaction was to spring for the "cutting-edge" solid-state gear.

Within a year or so, I'd enrolled in the Commercial Music class at my local high school, where they had a Roland JC-120 Jazz Chorus amp that was shared with the jazz band. I finally met a couple of older and more experienced guitarists there, and our class band played stuff like U2's "New Year's Day," Dire Straits' "Money for Nothing," and god-awful Top 40 stuff with synth parts that sounded like the themes from nighttime "news magazine" shows.

I still didn't know jack about tone, though—or at least not enough to make good decisions. In the grand scheme of guitar things, it was an unfortunate time to come of age: Digital was becoming much more prominent and powerful—and for fewer dollars—and the seminal guitar tones and gear from the '50s on through the '70s was suddenly deemed outdated and limited. It was a perfect storm for clinically clean, one-dimensional tones that sounded nothing like the guitars that'd forged rock up to that point, even when augmented with pedals of the period (I had a DOD American Metal and, later, a DigiTech PDS1550). And catching snippets of interviews with guitarists like Joe Satriani talking about using a JC-120 for clean tones just prolonged the time till I discovered tube tones.

A slight tonal turning point finally came when I started going to clinics put on by visiting shredders at local shops. Players I'd read about, like Paul Gilbert and Frank Gambale. Players who seemed to be reawakening to at least *half* of the truth about great guitar sounds. Players extolling the virtues of new 12AX7-powered digital preamps like the ADA MP-1, which I bought and ran through the JC-120. (Yes, I ran a metal-head preamp through a squeaky-clean, jazz-cat amp. Theoretically, it seemed like pure genius.)

Toward the end of the '80s, 6-stringers finally seemed to remember en masse that great tones usually come from all-tube amps—an awakening due, no doubt, to the success of Guns N' Roses' old-school renaissance. I couldn't afford one for a while after that, but after graduation I finally got half of the amp rig used by my (then) newfound hero, Eric Johnson. His *Ah Via Musicom* convinced me a Fender Twin and a Marshall plexi were the keys to amazing tone, but I could only afford the former so I got a '65 reissue and a Hughes & Kettner Tubeman pedal to drive its front end.

But the awakening wasn't complete till a bit later when I realized that pedal-generated distortion could never compete with what other power tubes could generate in amps with less headroom and a different tube topology. Soon afterward, I went on a bit of an amp-buying spree: I experimented with an EL34-powered Bedrock combo, and EL84s in a VHT Pittbull 50/12 and a Matchless SC30.

A little later, I foolishly let myself swoon over a pricey digital-recording system, selling my rare Matchless Skyliner Reverb to bankroll it. Next up was a 6L6-powered Reverend Hellhound, then had a short-lived trial with a Line 6 Flextone II modeling amp before grabbing a plexi-voiced Budda Superdrive 30 II, and then a fantastic-sounding Fender '65 Deluxe Reverb, a silverface Fender Vibro Champ, a Laney VC30, and now a Goodsell Valpreaux 21.

For the most part, all these amps sounded great, and each successive one was either an improvement in sound or at least a new adventure that helped me narrow down my aural ideal. Many of them I wish I still had, although I have to say that I've never been happier about my amp tone than I am now—and it's lasted longer than with any other amp, too.

Here's to your amp adventures in this issue, those in your past, and those in the future. And if you feel like sharing them, please write me.

Shawn Hammond
shawn@premierguitar.com

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Photo by Jasen Petersen

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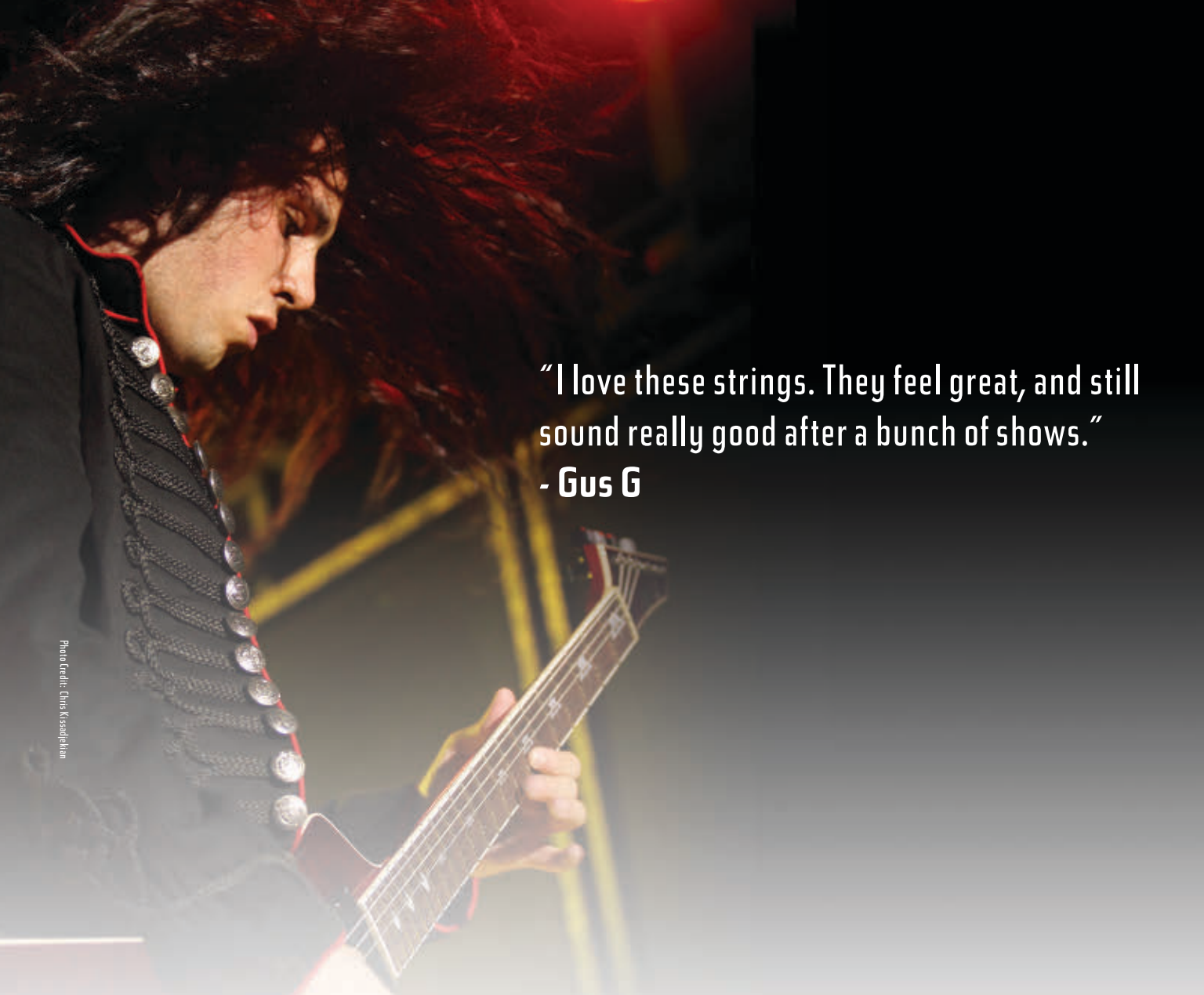

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- Gus G

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This month on PremierGuitar.com...

<<< The Rigs Behind the Wall

One of the most mind-blowing tours of the last decade is Roger Waters' *The Wall* tour. We catch up with the guitarists behind the epic production—Dave Kilminster, Snowy White, and G.E. Smith—along with Waters' guitar tech to see what gear is used to keep those classic tones as tight as possible, and what it's like to try to fill David Gilmour's shoes.
Online July 18. Search for: Rig Rundown: The Wall Tour

VVV Inside TC Electronic

You don't have to book a transatlantic flight to peek inside TC Electronic's Denmark headquarters—a place that birthed such innovative products as the PolyTune and TonePrint-enabled stompboxes, as well as critically acclaimed tone machines like the G-System and Nova pedals. We take you there in our video tour!
Online now! Search for: TC Electronic Tour

^^^ Live from Nashville!

As always, we're reporting live from this year's Summer NAMM show in Nashville, Tennessee, on July 12-14. The summer version of the musical instrument industry's biggest trade show is home to a unique blend of new gear from major manufacturers and small shops catching our eye for the first time. Keep up with all of *PG*'s coverage—including video demos, photo galleries, and a blog from our Editor for a Day winner—at premierguitar.com/namm.
Online July 12-14. Search for: Summer NAMM '12

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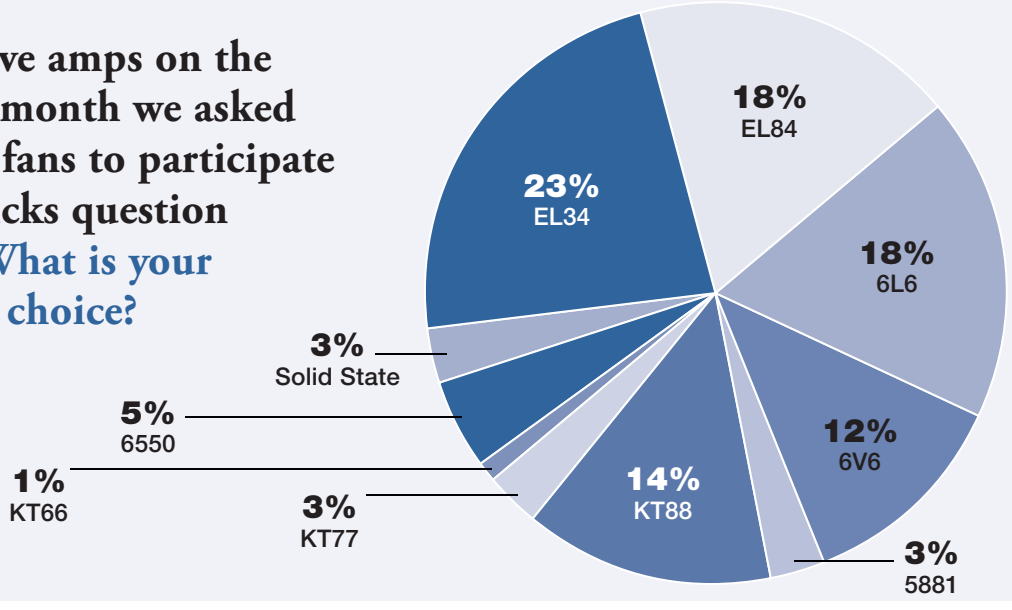
POLL OF THE MONTH

Clearly, we have amps on the brain. So this month we asked our Facebook fans to participate in our Staff Picks question [see pg. 28]: What is your power tube of choice?



>>> Chickenfoot Live Gear

Check out our photo gallery to see what Joe Satriani, Sammy Hagar, and Michael Anthony are using to rock the house on this summer's Chickenfoot tour.

Online now!
Search for: Chickenfoot Live Gear 2012

Hear the Chime

Our "Champions of Chime" written feature [pg. 87] is just the tip of a tastefully toneful iceberg. Head online for the full multimedia experience, complete with separate demo videos of each of the nine amps in the roundup, each played by all three of our pro players: Justin Derrico, Taylor Locke, and Steve Trovato.

Online now! Search for: Champions of Chime

FACEBOOK PHOTO OF THE MONTH

PG reader Chuck Jonkey channeled an interest in Native American culture into this customized acoustic "Pow Wow" guitar. Inspired by sacred "war shirts" worn by Native American warriors, the guitar is covered in leather with buckskin fringe, turquoise-beaded rosette, and locks of horsehair. As for the tone of the guitar underneath all of that leather, Jonkey says: "Actually, the guitar sounds great, I'm finishing a recording with it now."

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July 18–24

GtrWrks 19 Sixty 3
July 25–31

Mid-Fi Electronics Demo Tape Fuzz
August 1–7

Earthquaker Devices Bit Commander
August 8–14

This month on PremierGuitar.com...

<<<

Gibson Custom's Artist in Residence

The Gibson Custom Shop has unveiled work from their first-ever Artist in Residence, James A. Willis. We bring you a photo gallery of his work, including this NYC-themed guitar and a trio of Edgar Allen Poe-inspired instruments.

>>>

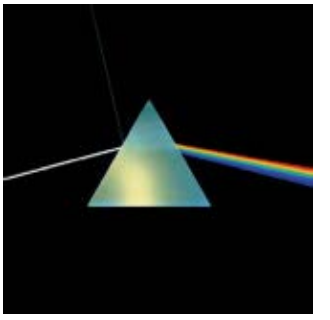
Wayne Krantz

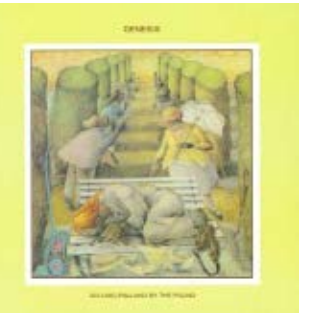
The jazz-fusion guru discusses his new star-studded album, *Howie 61*.

VVV

Style Guide: Progressive Rock

Add some depth to your rock jams by adding altered time signatures, unusual modes, and more.





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Mark Tremonti

Tremonti gives us a candid, firsthand look at the making of his debut solo album, *All I Was*, tells us how he juggles his solo career with Creed and Alter Bridge, and reveals his secret desire to be a blues/fusion guitarist.

VIDEO REVIEW DEMOS

AXL USA Bulldog

Nocturne Blondeshell

Carvin Steve Vai VL300 Legacy 3

Ibanez 25th Anniversary RG Model

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MÅRTEN HAGSTRÖM

May 6, 2012
The Fillmore
San Francisco, CA
Photo by Stephanie Cabral

Swedish extreme-metal band Meshuggah's rhythm guitarist Mårten Hagström lays down some hardcore riffage at a sold-out show at San Francisco's famed Fillmore Auditorium. Hagström's 8-string is his recently released signature M8M built by Ibanez. Loaded with a single Lundgren Model M8 humbucker in the bridge, the M8M has an extra long 29.4"scale length allowing for serious down-tuning.

BEN KWELLER

April 25, 2012
El Rey Theatre
Los Angeles, CA
Photo by Lindsey Best

At the tail end of the US portion of his tour supporting *Go Fly a Kite*, indie rocker Ben Kweller puts down the SG to deliver some acoustic work on his 1967 Epiphone Texan. Kweller picked up the guitar while on tour in Cleveland several years ago and it's been his favorite acoustic since. Outfitted with a Fishman Thinline under the saddle, Kweller says the wood above the soundhole has been broken through several times due to his "poor—I mean *unique*—strumming technique."

WARREN DEMARTINI

May 12, 2012
Merriweather Post Pavilion
Columbia, MD
Photo by Frank White

A pioneer of the ’80s glam-metal era, Ratt lead guitarist Warren DeMartini delivers some metal nostalgia while the band headlines the 2012 M3 Rock Festival. Wielding his Charvel Warren DeMartini Signature San Dimas, the graphic-laden guitar relies on a custom-designed Seymour Duncan humbucker and a single volume knob. According to DeMartini, the guitar is all stock with the exception of the capacitor he installed to reduce low frequencies and deliver cleaner tone at lower volumes.

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- Kirk Hammett, METALLICA
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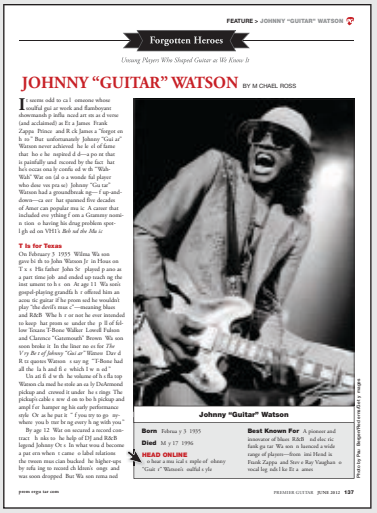
Your Feedback

GREAT DISCOVERIES

Many thanks for the feature on Johnny Guitar Watson, one of my all-time favorites, and criminally under-appreciated. Once discovered, you start hearing his influence all over the place. Many players quote him regularly and few listeners (or other players) ever realize it. About time someone gave some credit to a true original and innovator.

—Leonard Griffie
Medford, Oregon


FEATURE > JOHNNY "GUITAR" WATSON

Forgotten Heroes

Unsung Players Who Shaped Guitar as We Know It

JOHNNY "GUITAR" WATSON BY MICHAEL ROSS

Johnny "Guitar" Watson

Born February 3, 1935

Died May 17, 1996

HEAD ONLINE

Best Known For

PREMIER GUITAR JUNE 2012 127

Dear PG:
Thank you for introducing me to the music of Oz Noy—you have changed my life in a fundamental way. That is all.

—Brian Van Kley
Oswego, New York

Righteous Rig Rundowns

It was nice to watch a video [Red Hot Chili Peppers' Josh Klinghoffer Rig Rundown, June 2012] with a tech that not only knew what was there, but *why* it was there. It can't be the easiest job in the world, but he just seemed to know exactly what he was talking about. And it was nice to see someone English representing. Bright Onion have done a couple of things for me, and I can't credit them highly enough!

—Paul, via premierguitar.com

It's nice to hear a Northern English accent on a Rig Rundown video! [RHCP tech] Ian Sheppard clearly has a grasp on one of the most complex pedal and amp systems described to date, and it's great to see just how he solves the many problems that the Red Hot Chili Peppers' set list creates!

—SteveLaffertyGuitar, via YouTube

I don't know anything about Wilco or their music, but [Nels Cline Rig Rundown, January 2012] was one of the *best* Rig Rundowns ever. Very entertaining, enlightening, educational, cool! Nels seems like a real character and is someone you'd like to hang with. Thanks for posting.

—gman8thst1, via YouTube

Aces of Bass

Hi Shawn,

Great article ["Four 4-Stringers Who Shake My World," Tuning Up July 2012]—loved to see Muzz and Darryl in there. They are surely two of my favorite bass players. Since you asked, here are a few of my favorites:

- Tony Pettit (Fields of the Nephilim/Rubicon/NFD … the '80s Fields of the Nephilim stuff is gold)
- Blacky (Voivod, the first four albums)
- Paul Raven and Youth (Killing Joke)
- Craig Adams (Sisters of Mercy/the Mission)
- Frank Bello (Anthrax)
- Dan Lilker (Brutal Truth/Nuclear Assault/Broken Bones/SOD and a few hundred more)

Pleasure to read, keep it up and best,

—Martin Choquette, via email

Eighth-Note Ethics

Hi Guys,
Victor Broden's article, "Tools of the Trade for Bassists: Eight-Notes," in the June edition was absolutely spot-on! I have never heard the role of a bass player in a band delineated so eloquently. While I am mostly a guitarist/singer/songwriter, I have been a bass player, and these days I function as both guitarist and bassist in the studio. Victor's description of the beauty of the eighth-note ethic was only surpassed by his examination of the significant differences in various feels that a good bass player can elicit with just a few subtle approaches in technique and attack.

It's been my experience that many would-be bass players who want to exhibit all their hot chops are, in reality, nothing more than frustrated guitar players. While not specifically stating it, Victor got his point across in a big way, demonstrating that the mindset of a good bass player is a whole different dynamic than that of a guitarist.

I have taken his explanations and nuances to heart and immediately incorporated them into my recordings, and the results have been immediately phenomenal. Thanks, Victor, for explaining a concept that is at once so simple, but so elusive for so many. In closing, Cliff Williams of AC/DC gets my vote for president of the eighth-note states, with a nod to Mark Evans as well. I was just digging the heck out of "Shot Down in Flames" and "Live Wire" driving home from rehearsal a couple nights ago.

—John E. Mausen
San Jose, California

Speaking of 4-Strings

I use *Premier Guitar* as my main source for information, however, I find a too little amount of information is present concerning basses. Is there a possibility to give the 4-stringers some more attention?

Kind Regards,

—Job van der Werf
Netherlands

PG Associate Editor Rich Osweiler responds: *Thank you for the email. We certainly rely on comments from our readers to help shape our content, and as a bassist myself, I appreciate your wanting as much 4-string coverage as possible. Hopefully, you've noticed the increased coverage of all things bass over the past year. We have at least three bass reviews per month, two bass-related columns per month, and more bass-centric artist and builder profiles than ever before, so bassists should feel at home with* PG *as much as our guitar-playing friends. Thanks again—and stay tuned!*

Keep those comments coming!
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News Bits

CHARITY

Les Paul Estate Auction Raises Nearly $5 Million

Beverly Hills, CA — The auction of property in Les Paul's estate, including his collection of guitars along with recording equipment and other personal property, concluded on the day that would've been Paul's 97th birthday.

Guitar highlights of the auction included a 1927 Gibson L5 sunburst guitar which sold for $87,500; Les Paul's touring rig, which sold for $81,250; a 1982 Gibson Les Paul prototype recording model, which sold for $180,000; a 1950s white Gibson Les Paul flattop with extensive technical notations which sold for $75,000; a 1940s Epiphone Zephyr known as "Klunker #3" which sold for $144,000; and a 1951 Fender No-Caster which sold for $216,000.

The auction benefitted the Les Paul Foundation—the charitable organization founded by Paul before his death—which is dedicated to music education, engineering, innovation, and medical research.

lespaulfoundation.org

OBITUARY

Pete Cosey, 1943 – 2012

Chicago, IL — Influential soul-blues and jazz-fusion guitarist Pete Cosey died on May 30 at age 68. Cosey recorded and toured with soul acts like Etta James and Aretha Franklin, but made a name for himself as a session guitarist for Chess Records in the '60s. Cosey's effects-laden Gretsch work can be heard on Muddy Waters' 1968 classic *Electric Mud* and its follow up, *After the Rain,* as well as on Howlin' Wolf's *The Howlin' Wolf Album*.

Pete Cosey onstage with Miles Davis circa 1973. Photo courtesy of Urve Kuusik/Sony Music Entertainment.

Cosey switched gears in the '70s and went on the road with Miles Davis, contributing searing leads to Davis' mid-'70s work. After Davis retired, Cosey worked on and off, recording with Herbie Hancock in the early '80s, replacing Bill Frisell in the hard-funk, fusion trio Power Tools in the late-'80s, and working on his own projects in the past decade. —Reporting by Bill Murphy

OBITUARY

Doc Watson, 1923 – 2012

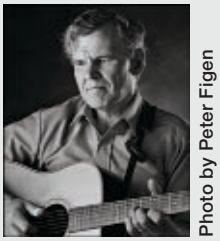

Photo by Peter Figen

Winston-Salem, NC — Arthel Lane "Doc" Watson died on Tuesday, May 29 at Wake Forest Baptist Medical Center in Winston-Salem, North Carolina. He was 89.

Born in 1923, Watson brought the guitar into the modern age of folk and mountain music with his incredible facility and ability to switch between fingerstyle and flatpick-style with ease. He came to prominence during the folk revival in the '60s and toured throughout the United States as a solo performer. In the early '70s, Watson formed a duo with his son Merle—namesake of the annual MerleFest that Watson hosted—until Merle's untimely death in 1985.

By combining traditional bluegrass with elements of gospel, blues and folk music Watson influenced countless guitarists of all genres and recorded more than 50 albums. Although not known as a prolific songwriter, a few of Watson's songs have been recorded by other artists. Alison Krauss and Robert Plant recorded "Your Long Journey," which was co-written by Watson's wife, Rosa Lee, and included on their Grammy-winning album, *Raising Sand*.

During the last few decades Watson's recording output slowed down but he continued to play gigs until the end of his life. Recently, he has been inducted into the International Bluegrass Hall of Fame, received a National Medal of Arts from President Bill Clinton, and an honorary doctor of music degree from the Berklee School of Music. —Jason Shadrick

CONTEST

Boss Loop Station World Championship 3 Announced

Los Angeles, CA — Loop masters can submit a 5-minute or shorter video performance with any Boss RC-series looping product between June 1 and August 31, 2012. Boss will choose the top six entries based on creativity, musicianship, stage presence, and technical skill for the U.S. finals in Hollywood, California, on October 20, 2012. The winner of the U.S. Finals will represent the United States in the Boss International Loop Station Championship at Winter NAMM in Anaheim, California. Prizes include up to $3,000 in Boss gear.

bossus.com

TRAGEDY

Stage Collapse Kills Radiohead Drum Tech

Toronto, ON — A stage collapse killed drum tech Scott Johnson and injured three other crew members on June 16, 2012. The collapse occurred an hour before gates were scheduled to open, and weather was not believed to be a factor.

Radiohead released a statement via their website: "We have all been shattered by the loss of Scott Johnson, our friend and colleague. He was a lovely man, always positive, supportive, and funny; a highly skilled and valued member of our great road crew. We will miss him very much. Our thoughts and love are with Scott's family and all those close to him."

An investigation is underway to determine the cause of the collapse. One week earlier, ZZ Top cancelled an outdoor gig with 3 Doors Down due to concerns with safety issues with the stage.

KICKSTARTER

Devi Ever Funds Cartridge-Based Console FX Unit

Minneapolis, MN — Pedal maker Devi Ever has funded a new cartridge-based, open-source, multi-effects unit dubbed the Console via Kickstarter. As of press time, the $20,000 goal had been met by 122 backers. The Console platform will be available as one-, two-, and three-cartridge units. Effects will be loaded onto video game-style cartridges that can be swapped in and out. At launch, cartridges will be available for 28 different Devi Ever effects. Devi Ever will provide design specs for people interested in creating their own cartridges, and plans to work with other effects manufacturers after launch.

deviever.com

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Fire Power

It's our amp issue so it's only fitting that *PG* staff enlist the help of two audiophiles —Ampmen Jeff Bober and Tim Schroeder—to celebrate our inner tubage.

Jeff Bober

EAST Amplification, Columnist

What are you listening to? Joe Bonamassa, *Driving Towards the Daylight*; Grace Potter and the Nocturnals, *The Lion the Beast the Beat*; Warren Haynes Band, *Live at the Moody Theater*; and of course—one of my amps!

What is your power tube of choice? Why, a 12AT7, of course! When used as an output tube, it can be glassy and full sounding or compress up and become very harmonically rich when pushed into distortion. A very cool little performer.

Rebecca Dirks

Web Content Editor

What are you listening to? Regina Spektor, *Begin to Hope*. I'm rediscovering this favorite from a few years ago. Simultaneously funky, pretty, and strong—I love this girl's voice.

What is your power tube of choice? Fresh off a 14-hour video shoot with the nine spectacular "Champions of Chime" amps —closed out by the simply amazing Justin Derrico—I feel I have no choice but to say EL84. Go watch the videos. Now.

Andy Ellis

Senior Editor

What are you listening to? Matt Munisteri, *Still Runnin' Round in the Wilderness: The Lost Music of Willard Robison*. Swinging interpretations of tunes by an amazing—yet largely forgotten—1920s songwriter and bandleader.

What is your power tube of choice? Currently, a lightly used, vintage Mullard EL34 running in my single-end THD UniValve head—an ideal "tube tasting" machine. But with dozens of single tubes to savor, I might say a NOS Philips 6V6GTA next week.

Shawn Hammond

Editor in Chief

What are you listening to? The National, *Sad Songs for Dirty Lovers*. The 2003 sophomore effort from inimitable vocalist Matt Berninger and twin 6-stringers Aaron and Bryce Dessner has all their trademark moodiness and atmospherics, plus some pretty rad electric-piano and vocal-chord-strafing moments.

What is your power tube of choice? In general, 6V6s suit my playing best, but for the last couple of years I've been getting the best tones of my life with 6973s.

Chris Kies

Associate Editor

What are you listening to? I've always lived and died by Queen's debut because of thrillers like "Liar" and "Keep Yourself Alive" alongside psych-tripper "Jesus." But after reexamining their catalog, *A Night at the Opera* takes the crown thanks to new B-side faves "The Prophet's Song," "39," and "Death on Two Legs."

What is your power tube of choice? My current setup is an EL34-monster Marshall combo, but after hearing the "Champions of Chime" in person, I'm ready to get a bit cleaner.

Rich Osweiler

Associate Editor

What are you listening to? A Place to Bury Strangers, *Worship*. With elements of Bauhaus, the Jesus and Mary Chain, and a meat grinder plugged into an overdrive, the fuzzed-out chaos served up from these Brooklyn-based noise rockers is aggressive, yet hauntingly melodic at the same time. Pick out your best shoes to gaze upon.

What is your power tube of choice? Give me 6550s and their oh-so-nice, big-and-clear warmth.

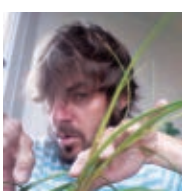
Tim Schroeder

Schroeder Audio

What are you listening to? I'm a bit obsessed with a little-known Wisconsin band, Fragile. They've made one *album*. I stress the word album because, while the tunes are strong in their own right, you are rewarded by sitting and *listening* to the whole CD, start to finish.

What is your power tube of choice? As I'm a big fan of headroom, I'm partial to the old GE-made 6550s. Big and beautiful!

Charles Saufley



Gear Editor

What are you listening to? All over the map, but keep returning to the amazing Jim Sullivan *U.F.O.* LP reissue (killer, circa-'69, baroque-country rock with Earl Palmer on drums!), Blues Control's *Valley Tangents* (genre-obliterating, twisted mood-manipulation instrumentals), and White Fence's *Family Perfume Vol. 2*. (sweet Kinksian/Syd Barrett/Skip Spence jigsaw puzzle pop).

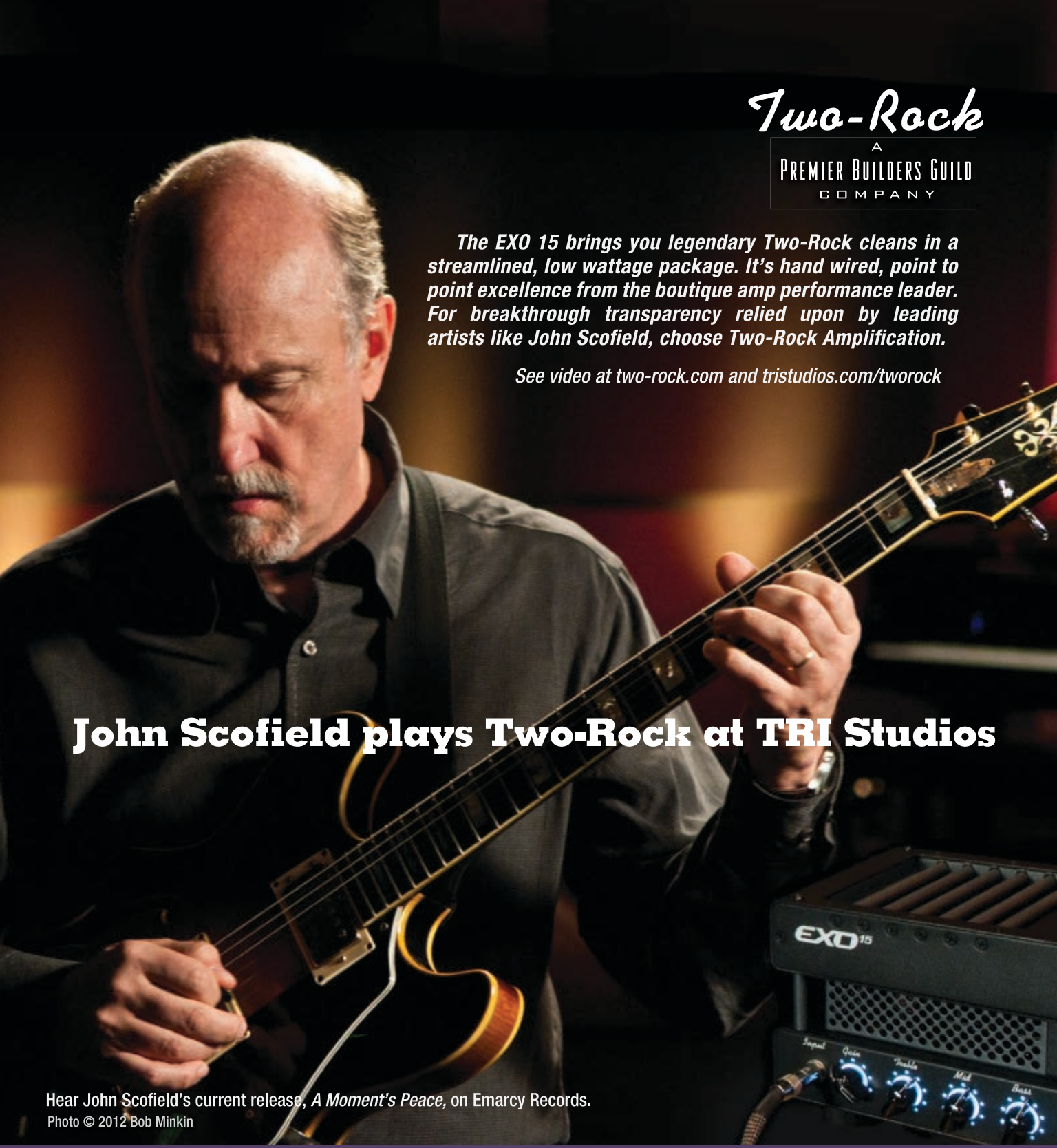
What is your power tube of choice? The fresh ones my repairman puts in after a tune-up! No worries for another two years!

Jason Shadrick

Associate Editor

What are you listening to? Pink Floyd, *The Wall*. After seeing Roger Waters' epic production at Wrigley Field, it gives me a new appreciation and insight into the greatest concept album ever made. Hearing Dave Kilminster play the "Numb" solo from 60 feet in the air makes you reconsider everything.

What is your power tube of choice? My usual tone recipe starts with a robust, clean tone and then I color that with pedals. To my ears, an EL84-powered combo usually does the trick.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ALBUM

Rush

Clockwork Angels
Roadrunner Records

Rush has created some of the most complex and groundbreaking rock albums ever. The Toronto prog-rockers' marathon, high-energy live shows continue to please a fiercely loyal fan base and defy the odds for a group conceived more than 40 years ago. But many of their efforts from the past 25 years have been more contemporary in nature—unable to hold a candle to classics like *Fly by Night*, *2112*, and of course, *Moving Pictures*.

Get ready to board a time machine because *Clockwork Angels* may be Rush's best studio effort since 1982's *Signals*. I'm not saying they've put out a *bad* record among their 20 releases, it's just been quite some time since one has grabbed me in the manner of their classic albums. This one did at times.

Not many bands can pull off a concept album like Rush. The story (to be released as a novel this fall) that drummer and lyricist Neil Peart delivers is the sci-fi tale of a man's travels across a mystical landscape of steampunk and alchemy.

Insofar as the musicality of Peart, Alex Lifeson, and Geddy Lee, there's not much to say that hasn't been said. Each is a master respectively, and this notion is reinforced. The lengthy tracks feature all the dynamic elements that make Rush the band it is, but this record really nods to their roots. When Lifeson gets "Carnies" started, you'd swear it was written during the same session as "Working Man." Rush has certainly done its share of dabbling with synths and putting out *way* over-produced material, but *Clockwork Angels* really hearkens back to heavy, in-your-face guitar riffs and thundering bass and drums.

The freshness here is a testament Rush's dedication and creativity, which remains incredibly strong even with their level of success and longevity. The sub-group of Rush fans who stopped buying their records in the '80s might be in for a treat. —Rich Osweiler

Must-hear track: "Headlong Flight"

ALBUM

Steve Vai

The Story of Light
Favored Nations Entertainment

Steve Vai continues the convoluted narratives found on 2005's *Real Illusions: Reflection* with his new concept album, *The Story of Light*— the second installment of a trilogy displaying Vai's interest in New Age spirituality.

As expected, this mostly instrumental album is filled with dense production, soaring multi-layered guitar tones, and tight harmonies. It does offer some nice surprises. Vai covers Blind Willie Johnson's "John the Revelator" with a gospel choir and Beverly McClellan (a finalist on *The Voice*). He also duets with singer-songwriter Aimee Mann on "No More Amsterdam" to great effect. And Vai gets in his share of familiar arena-rock workouts like "Velorum" and "Gravity Storm," and mellower compositions such as "Creamsickle Sunset."

It's a beautifully expansive work that orbits within a galaxy we've visited before, and Vai is truly awesome throughout. "John the Revelator" and "Book of the Seven Seals" are interesting because who *hasn't* wanted to hear Vai in the context of a gospel choir or black musical theater? Although his spiritual libretto will confuse some, his artistry will leave no nonbelievers. —Oscar Jordan

Must-hear track: "Gravity Storm," "No More Amsterdam"

ALBUM

Baroness

Yellow & Green
Relapse Records

Baroness believes in Darwinism. The Southern metal band's 2007 *Red Album* was a raw, chest-pounding, bruising debut, whereas 2010's *Blue Record* evolved into a much more dynamic, progressive-metal package. Baroness' third full-length and double LP, *Yellow & Green*, shows a band walking upright, fully realizing its potential.

"Take My Bones Away" and "The Line Between" are the album's most accessible songs with their octave-fuzz distorted guitars and fast-paced nature. Equally appealing is when guitarists John Baizley and Peter Adams harmonize à la Thin Lizzy. Lead vocalist Baizley unleashes his most true singing effort ever—best heard in slower songs. Complex, melodious guitar parts and synth-infused textures are balanced with subdued instrumental passages and acoustic numbers similar to Metallica's intros for "Battery" and "Fight Fire with Fire."

Yellow & Green captures a band in an organic maturation from its primal sludge roots, while the accessible nature of the music has the potential to catapult Baroness to larger audiences, much like Metallica's *Black Album*. —Chris Kies

Must-hear track: "Take My Bones Away"

ALBUM

Royal Southern Brotherhood

Royal Southern Brotherhood
Ruf Records

What a cool union! Two musical lineages intertwine in RSB, a new quintet headed by the mighty Cyril Neville. As a member of The Meters and Neville Brothers, the Grammy-winning vocalist and percussionist helped pioneer New Orleans funk, and at 63, he's still a force of nature. Les Paul-wielding Devon Allman, whose dad is Gregg Allman, represents the other, equally potent bloodline.

Allman and blues-rocker Mike Zito trade fiery leads and sweaty riffs throughout the 12-song set, and their contrasting Gibson and Fender tones are a treat for anyone who has OD'd on mushy, high-gain guitar sounds. Producer Jim Gaines (SRV, Steve Miller, Santana, Albert Collins, John Lee Hooker) deserves credit

for this, but ultimately it's Allman and Zito—and their road-honed sonic sensibilities—that make this such a satisfying tonefest. Allman's leads are rich and flutey, while Zito delivers crisp twang, shimmering chime, and biting slide. The songs are cool, the lead and harmony vocals spectacular, and the grooves are steeped in mojo, thanks to how drummer Yonrico Scott (Derek Trucks Band) and Neville lock down the *one*. If you like your soul with attitude, jump on the RSB bus. —Andy Ellis

Must-hear track: "All Around the World"

ALBUM

Pat Metheny

Unity Band

Nonesuch Records

Over the course of a 30-plus year career, Pat Metheny has experimented with every possible combination of instruments you could think of. With his newly formed Unity Band, Metheny brings back the quartet format with über-sax player Chris Potter joining the fold. Potter's robust, thick tone is the perfect foil for Metheny's folk-infused bebop lines and post-bop Americana tunes. As his first solo album with a tenor in the frontline since *80/81* (which featured the late Michael Brecker and Dewey Redman), Metheny digs deep into his compositional grab bag for a collection of tunes that feel as open as a Missouri wheat field, but also have a laser-sharp focus when it comes to intensity.

Rounding out the quartet is Metheny's longtime percussive partner Antonio Sanchez and young bassist Ben Williams. The cross-generational musical conversation is amply supported by Sanchez's deep rapport with Metheny's music. The two have been playing together for nearly a decade and their creative connection—fueled by Williams' fire—proves the Unity Band is aptly named. —Jason Shadrick

Must-hear track: "Roofdogs," "Breakdealer"

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SECRETS OF SIGNAL FLOW BY PAUL "TFO" ALLEN

In last month's column ["Recipes for Non-Guitar Sounds," July 2012] we explored a number of ways to achieve some unique tones by using different objects and pedals with a guitar. This month, let's examine the factors involved in getting the most out of your pedals and signal flow.

The first thing to understand is that there are many ways to configure your signal flow, and there's no "correct" method for arranging your pedals. The only rule here: If you like the way it sounds, it's right.

Volume Pedals

The first pedal that most people plug into on their board is a volume pedal, so it's vital to consider the rating of the potentiometer inside the pedal. Let's take a look at some of the differences between 500k Ω, 250k Ω, and 25k Ω pots.

More susceptible to ambient noise than lower-rated pots, 500k pots provide a high end roll-off as the pedal moves toward the heel position. Some guitarists like to have their amps set really bright and use this high-end roll off to make the sound creamier and less abrasive.

Probably the most common pot installed on production volume pedals, the 250k pot has great dynamic range for almost all passive guitar pickups. The high end remains more intact than it does on a 500k pot when the pedal moves toward the heel position.

A 25k pot is a good choice if you have high-output active pickups. The high end is preserved with phenomenal fidelity when the pedal is moved toward the heel. Basically, as the pot rating becomes smaller, the preservation of the high end is better maintained. Because I don't often use active pickups and I don't like sacrificing high end, a 250k potentiometer is the best option for my needs.

Overdrives and Distortions

Bryan Kehoe, the "in-house guitar culture representative of Dunlop effects," makes an interesting suggestion regarding the placement of multiple overdrives and distortions on a pedalboard.

"I arrange my fuzzes and distortions in a fashion so that the cleaner set of boosts and overdrives are placed later in the signal chain," says Kehoe. "To me, this is the most logical way to stack up the gain-stage ladder. The reason I do this is that the distortions and fuzzes have a lot of saturation and square waves. If the heavily saturated pedals go after the cleaner set, the more saturated pedals will choke off the transparent overdrives, which I don't prefer tone-wise."

Delays

Since distortions and overdrives are often paired with delay for lead playing, the placement of the delay also needs to be considered. Have you ever been playing a solo using your amp's lead channel with a delay pedal, and you hear a grinding, clashing, dissonant sound when you bend a string? If so, this most likely happened because your delay was in front of the amp's input. The best way to get around this problem is to run your delay through the amp's effects loop. Generally, the reason you don't want your delay before your overdrive pedal (or your amp's lead channel) is that the repeats from the delay will continue to cycle through the distortion with each delay generation. This can quickly result in a smeary-sounding sonic mess. When you put your delay in the effects loop, it is inserted *after* the preamp section of the amp and before the power section.

Effects Loops

Tim McKee at Mesa/Boogie provides us with a quick run-down on the differences between parallel and series effects loops. "A parallel effects loop is wired in parallel to the amp's dry signal," explains McKee. "And it has a mix level control allowing you to mix in the amount of wet signal from your effects in relation to the amp's dry signal at the effects loop return. This optimizes blending of effect levels and the amp's signal. This type of effects loop works well with multi-effects processors that have input and output level controls."

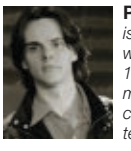
"A series effects loop sends the amp's signal from the amp's preamp section out through the effects send," continues McKee. "The signal is then fed back from the effects into the effects return. There is no mix level control (or potentiometer circuit) because *all* of the signal is fed through the send and comes back in the return. That said, both parallel and series effects loops interrupt the signal between the preamp and power-amp sections of the amplifier."

It is key to have unity gain at the effects loop, which means that the level coming back into the amp at the effects return is consistent with the level that left through the effects send. If these levels are not the same, you may have issues like changes in volume when stepping on certain pedals, or considerable "thinning" of your overall tone. The best way to avoid this is to keep anything that boosts a signal—like overdrives and distortions—out of your effects loop and in front of the amp.

Personally, I prefer to have all my pedals in front of the amplifier. When you are assembling *your* rig, the best approach is to study how several players arrange their pedals and why. You'll almost always pick up new tips and ideas from other players. Next month, I'll take you through some tone-improving modifications I recently made to my Fender Hot Rod Telecaster and PRS SC 245.

A peek inside a Dunlop DVP1 volume pedal reveals a 250k pot that's well suited for passive pickups and preserving high-end frequencies.

Wiring job in progress. A Line 6 M9 stompbox modeler, Line 6 G50 wireless system, MXR Bass Octave Deluxe, MXR Custom Badass '78 Distortion, Way Huge Pork Loin overdrive, and a Custom Audio Electronics MC404 wah mounted on a Trailer Trash pedalboard. When assembling a pedalboard, the key is to experiment with the arrangement of your stompboxes to optimize the signal flow for your playing style.



PAUL "TFO" ALLEN
is a multi-instrumentalist who has worked with Big & Rich, Adele, Sebastian Bach, 112, Jake Owen, Larry The Cable Guy, and many others. He also has his own project called Ten Finger Orchestra. Reach him at tenfingerorchestra@yahoo.com.

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—COLLIN RAYE

PANNING YOUR GUITAR IN THE MIX BY RICH TOZZOLI

If you want your recording to sound professional, it's essential to create space for your guitar in the mix. One way to achieve this is through creative panning. Well-placed instruments can make the difference between a muddled mix and one where everything is heard clearly. Let's examine a few panning ideas you can use on your next production.

Think of the stereo mix field as a canvas for sound. And on your mixer—whether it's a hardware device or a virtual one on your computer screen—that canvas spreads from approximately 7 o'clock (hard left) to 5 o'clock (hard right). That's all you have to work with—you can't go outside of that box (unless you're working in surround sound). When you mix a piece of music, you have to fit every instrument in there.

With that in mind, the vocal, bass, and kick drum usually occupy the 12 o'clock position or thereabouts. You can build the rest of your mix around that core. Let's say in addition to the vocal, bass, and kick, you have some stereo keyboard pads. Don't just settle for leaving them hard left and right. Think about moving either the left or right pan position to create some space—to the 9 or 3 o'clock position, for example. I'll often do the same thing with drum overheads—pan them in tighter to make room for other instruments and sounds.

In that empty space, you can place a reverb signal for your guitar. (Hey, that's what we really care about—our guitars!) For example, when I'm working with a mono guitar amp plug-in, I'll start with a pan position of, say, 10 o'clock. Then I'll take a send from that to a reverb on a stereo auxiliary track. From there, I'll do one of two things: I'll either pan the track to the hard right 5 o'clock position, or if the plug-in has panning within it, I'll do it there and leave the stereo panners intact. Either way, this puts the guitar direct sound at 10 o'clock with the reverb at 5 o'clock. This opens up the stereo soundstage and makes for a nice big guitar sound.

Sometimes, however, I'll do just the opposite. I'll create a mono auxiliary track for reverb and pan it directly on top of the guitar position (say, 10 o'clock again). I'll do this primarily when using guitar plug-ins that have no reverb, such as Amp Farm. Reverb plug-ins like Audio Ease's Altiverb have samples of real guitar springs in them, and by panning them in mono on top of the plug-in, I'm simulating the sound of a mic'd guitar amp. The same techniques apply to delay or echo, not just reverbs.

Guitar-centric plug-ins such as Universal Audio's EP-34 Tape Echo or Roland RE-201 Space Echo tape delay both have panning ability built into them. When using the EP-34, I will often take the echo pan knob and twist it to one side or the other. It can create some really cool echo/delay effects this way and help punch a guitar through a mix.

When panning electric and acoustic guitars in the same mix, I tend to place them opposite each other. This helps differentiate their tonality and create space for each instrument.

Offering separate controls for the reverb pan and echo pan, RE-201 Space Echo goes even a step further. When sending guitar tracks to the 201, I'll often pan both the reverb and echo to the opposite side of my guitar. However, you can generate some cool sounds by panning the reverb and echo to opposite sides of each other. Sometimes, as in the Altiverb example above, I'll pan them right on top of the guitar track itself, simulating running the guitar through the 201 and then into the amp. Every situation will be different depending on the rest of the instruments in the mix.

When panning a mic'd cabinet or amp, I'll first solo each mic (usually that's both a ribbon and a dynamic) and listen for the tonality of each (ribbons are usually warmer and softer, whereas dynamic mics are often edgier). Then I'll pan them accordingly. With mic'd amps, I find myself panning a bit wider in the stereo field (unlike the 10 o'clock position of the mono guitar plug-in). Sometimes I'll pan the dynamic mic hard left at 7 o'clock and place the ribbon at around 9 o'clock. If I've used a room mic with this combination, I'll often pan it to the complete opposite side at 5 o'clock. That is my "natural" reverb and it can make for some huge guitar sounds.

Universal Audio's EP-34 Tape Echo plug-in (based on the original Echoplex tape delay units) simulates a vintage tape delay and offers opportunities for creative panning.

When panning electric and acoustic guitars in the same mix, I tend to place them opposite each other. This helps differentiate their tonality and create space for each instrument. Obviously, the more guitars you have layered, the harder it is to cut them through a mix. With densely packed guitar productions, I'll make more use of panning hard left and right, trying to give myself as much of the stereo field as possible to work with.

Each production will have its own panning needs. But to get that guitar to cut through the mix, try tightening the pans of the other instruments around it, and use the hard left/right positions for effects such as reverb or delay. Take the time to experiment with different pan positions, and make sure that guitar is the loudest thing in the mix. Wait, did I say that?

RICH TOZZOLI *is a Grammy-nominated engineer and mixer who has worked with artists ranging from Al Di Meola to Ace Frehley. A life-long guitarist, he's also the author of* Pro Tools Surround Sound Mixing *and* The Ultimate Guitar Tone Handbook, *as well as a composer for shows such as* Fox NFL, Pawn Stars, American Restoration, *and* Gene Simmons Family Jewels.

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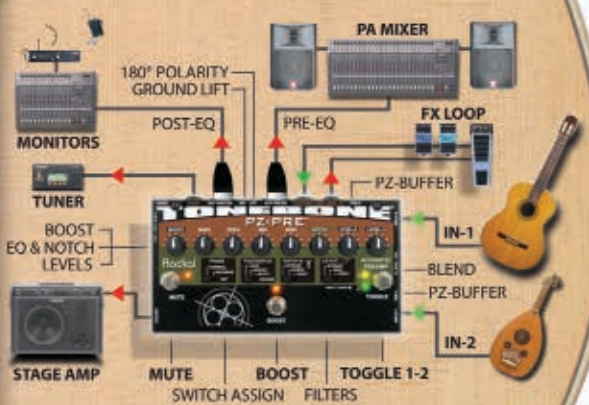

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AIMING FOR PERFECTION BY STEVE COOK

If you ever took music lessons, you were probably told to play your scales until they were "perfect." We would labor to get them right, but even if every tone was smooth and even—with every note the exact same length, intensity, and volume—the execution would still not be perfect. It could be excellent, or possibly even world-class, but not perfect. The more worldly instructors know that this is an impossible task, yet they encourage us to aim high. Perfection is the level we should try for in everything we do—from musical performance to how we carry ourselves to how we set up our gear—because the closer to perfect we can get, the less room there is for error.

When you sign that imaginary contract to become a professional musician (now I see why the high school guidance counselor didn't have a booklet on this occupation), then your goal should always be perfection. You want to nail the audition. You want to play the show perfectly. You want your gear to work flawlessly every time. But since this *is* real life we are talking about, we all know this really doesn't happen. There are just too many factors at play that get in the way. It's one thing to have a perfect show day, but it is another thing all together to know *when* that day is falling short and how have the mindset to overcome the hurdles keeping you from your goal.

Recently, we had a one-off show that took us from Nashville to Cedar Rapids, Iowa. One-offs are easy—you get on the bus, do a show, and then head right back home. It's a simple concept, and since we've done this hundreds of times, the situations almost run themselves. Almost.

The first problem we had was with the trailer, which caused a four-hour delay and pretty much set the tone for the day. Instead of a soundcheck or even a decent line check, we were shifted from our plan of a comfortable load in and setup to what is known as a "throw and go." Our setup is not that complex and our crew can usually have us up and running in no time at all. Take away the video walls, "ego ramps," and the moving lights and smoke, and our setup is essentially not much different from that of a local bar band. At its core, it's still a guitar or bass going into an amp that's plugged into the PA.

Until the problems set in. Without the benefit of a soundcheck, we just ran through the signals of each instrument, and of course, there was no signal from the bass rig. There

Steve Cook combats a truckload of technical difficulties at a recent outdoor festival: No signal due to a faulty DI, a funky mix from having to re-route his signal, and a malfunctioning mic—all of this on top of an empty stomach.

is nothing worse than being the cause for a show delay, especially since I pride myself on having my gear in top working order. But as stressful as it is, that moment of imperfection is not the time to worry—it's the time to fix it and get it right. For no apparent reason, my preamp DI decided not to work, even though it was 100 percent just two days prior. The minutes seem like hours trying to fix the problem, and since I didn't have the benefit of a bass tech, I was behind the rig getting things back up and running.

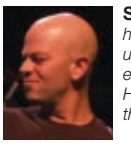
As the show began, other little imperfections popped up. While the bass issue was fixed with re-routing, the gain was now way off from the normal mix and *everyone* onstage was needing adjustments. It didn't help that monitor world (the catchy insider name for where the monitor engineer is stationed) was offstage and below our field of vision. And this meant the engineer had to make an adjustment, then move to where we could see him, and then go back to the console. I think he walked a mile in 30-foot increments during that 60-minute set. Then my microphone went out (the gnomes had it in for me that day), the drummer's snare broke onstage, and the piano was having issues as well. Take into account that we hadn't eaten or showered, and it suddenly had the makings for "one of those gigs we'll always talk about." But in reality, it wasn't *that* bad.

The thousands of people who paid to see the show had no clue that we were having problems onstage. The lady in the third row could have cared less if I didn't have enough keyboards in my in-ear monitors. And even if she had known about it, she was there to see the artist, not a sideman.

With so many problems that could potentially plague a show, it's a wonder things like this don't happen more often. But truth be told, they really *do* happen all the time. And the ability to work through the adversity and make the show happen will separate players in a hurry. Guys that freak out over a bad cable or an ear mix tend to have a shorter shelf life than others who can adjust and still play a perfect show, or a reasonable facsimile thereof.

You're probably scratching your head as to what to take away from this column. The first point is that we're not perfect, but setting very high standards and expectations for ourselves will set us apart as musicians, performers, and composers. When you push yourself, your results will get better, and in turn, you become better.

Another thought you should consider: What do you do when perfection isn't reached? I didn't have a perfect show, but some said it was one of the best shows they've been to. Your gear will not always perform how you want it to, so get to know your equipment and what makes it tick. Luckily, most musicians are tinkerers and can make things work in a pinch. No player is perfect, no bass is perfect (though that '59 P comes awfully close), and no gig is perfect. Life also isn't perfect, and we're thrown challenges every day. Get to know yourself because you could be fighting yourself in your reach for perfection. How do you practice? Are you late for rehearsal? Do you get mad when someone says you're playing something incorrectly? Think about what happens when you get in the way of *you*, and how to keep yourself in the best headspace you can.



STEVE COOK
has been fighting his rock-star frontman urges for decades, holding down the low end for such artists as Steve Cropper, Sister Hazel, and Phil Vassar. Join in his "touring therapy" on Twitter @shinybass.

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CHOOSING BETWEEN INTERNAL AND EXTERNAL MICROPHONE PREAMPS

BY MITCH GALLAGHER

In my June 2012 column, "Delving Deeper into the Audio Interface," we discussed audio interfaces and how some have built-in microphone preamps—just plug in your mic and get recording. So why would you want to have one or more separate mic preamps?

First of all, most audio interfaces have a limited number of mic preamp inputs. Interfaces with two mic preamp inputs are common, some offer four, and some have as many as eight. But if you're trying to record a full band, that may not be enough. Fortunately, many audio interfaces offer line-level inputs along with their built-in mic preamps. By using these line-level inputs to route signals from external preamps into the interface, you can run more mics simultaneously.

The second reason to use external mic preamps is for the tonal colorations they can provide. In most cases, the microphone preamps that are built into audio interfaces are designed to be clean and transparent. But if you want a different tonal coloration, external mic preamps can help. Some are designed for clean and transparent operation, while others are designed to provide a specific "color" to the signals they process. Some offer thick mids, others offer warm top end, and so on.

In the "clean" category, you'll find preamps from Grace Designs, Millennia Media, GML, and others. "Colored" preamps include Chandler Limited, Universal Audio, and A Designs. "Classic" mic pres include those designed by the legendary Rupert Neve, who has made preamps for Neve, Focusrite, Amek, and his current company, Rupert Neve Designs. You can also find Neve preamp clones, such as those from Great River, Vintech, and Brent Averill. Many engineers love API preamps for drums and electric guitar because of their thick, punchy midrange response.

In my opinion, the contribution a preamp makes to a recorded sound is often subtle compared to the contribution made by the microphone and mic placement. And certainly, getting the sound right at the source before it ever goes into a mic makes the biggest contribution to the final sound. My advice is to go for the best preamp you can get with your resources. These days, even an inexpensive preamp can give you great sound quality.

1. Even a super-inexpensive mic preamp like the $39 Behringer Tube Ultragain MIC100 can provide useful coloration in the studio. **2.** A channel strip—like the Joemeek threeQ—offers a one-stop recording solution that connects directly to your DAW. **3.** The PreSonus DigiMax D8 provides eight mic preamps that can be fed digitally into your DAW, instantly expanding the number of tracks you can record at once.

External microphone preamps can provide features beyond boosting mic-level signals into line-level signals. Some offer built-in analog-to-digital converters so you can route your microphone into the digital inputs on your audio interface. Some preamps include built-in equalizers so you can adjust the tone of your signals as they pass through the box. And some have built-in compressors for controlling dynamics as you record signals. Some even go further with built-in de-essers, gating, and other processing. Such preamps are usually referred to as "channel strips," because they resemble a channel from a full-featured mixer. Whether these additional features are worth having depends on how you like to work.

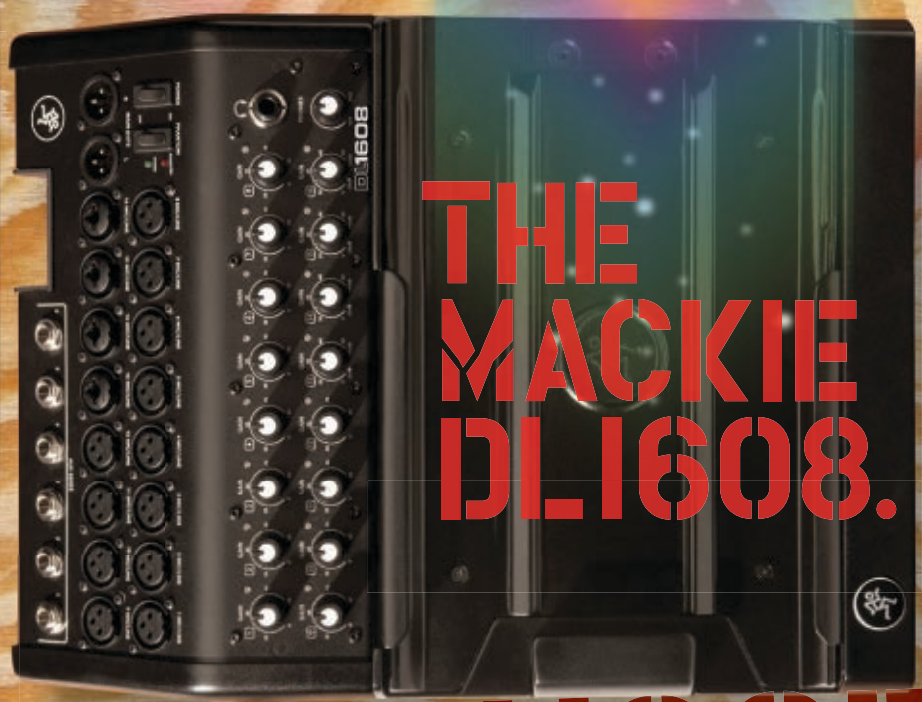
There are basically two camps of recording engineers. One camp likes to *commit* to a sound as they are recording. They're happy to use EQ and compression as they are tracking to fine-tune the signal on the way into the recorder. Someone in this camp would find built-in processing in a microphone preamp to be very useful.

The other camp likes to track "dry," with no EQ, compression, or other processing. The idea is to capture a robust, unaltered signal that can be processed during mixdown to adjust the tone or dynamics as required. The advantage to this approach is that you hear each signal in context of the overall mix and are free to do what is necessary without having to work around EQ or compression that was applied during recording. Someone in this camp would prefer to have their microphone preamps unadorned with additional features.

Which method is better? It comes down to what you are doing, the types of signals you are recording, and how you like to progress through a project. Personally, I prefer to have a mix of preamps available and I work with external preamps most of the time for maximum flexibility and for additional options while tracking. I like to have clean, transparent preamps for acoustic guitars and for capturing pristine electric tones. Then I like to have a colored preamp or two, including a tube preamp that can thicken and "punch up" electric tones. A channel strip (transparent and colored types of these are available too) is useful for tweaking the tone and smoothing out dynamics a bit on the way into the audio interface.

External preamps are useful for the color and features they can provide, but they are not essential. You can capture great sounding tracks using the preamps that are in your mixer or audio interface.

MITCH GALLAGHER'S *latest book is* Guitar Tone: Pursuing the Ultimate Guitar Sound. *He is the former Editor in Chief of* EQ *magazine. In addition to being a writer, he is a freelance recording engineer/producer/mastering engineer, teaches music business and audio recording at Indiana University/Purdue University, and is Sweetwater's Editorial Director. www.mitchgallagher.com*



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PEDAL JUNKIES UNITE! BY KEVIN BOLEMBACH

In my previous column ["Raising the Bar of Wah Design," May 2012], I quoted some statistics about the vast amount of effect brands that are currently on the market. While the numbers I listed have likely changed since then, it's worth noting that someone is actually out there compiling this type of data, not to mention a ton of other useful and interesting factoids pertaining to—and only to—guitar effect pedals and the people who build them.

This oracle of all things stomp is effectsdatabase.com (formerly known as Discofreq). Created by Bart Provoost, FXDB started 10 years ago as a website about envelope filters, and since filter boxes are one of my obsessions, it was inevitable that I ran across the site and bookmarked it for future reference.

Since then FXDB has grown into the go-to source for info on pedals, be they vintage or in current production. There are more effect pedals listed on FXDB than any other place that I can think of, and the listings cover many extremely obscure brands and models that most people don't even know about.

Yet the best (or worst?) thing about FXDB is that Provoost helps you find the effects you're looking for and buy them. When searching for that hard-to-find vintage pedal or even the low-profile custom builder, FXDB is a great place to narrow your search and zero in on the pedal of your desire (more on how this actually works in a moment).

There are more effect pedals listed on FXDB than any other place that I can think of, and the listings cover many extremely obscure brands and models that most people don't even know about.

I recently spoke with Provoost and asked him to list a few of the things that set FXDB apart from other pedal-related websites. Here's what he had to say about some of the site's unique features and his future plans to make it even more useful and informative:

- *Complete pedal database: No other site lists this many different pedals—more than 17,000 already! There are quite a lot of pedals you can only find here. The drawback is that I need to add more info about a lot of them, but I'm working on that (and all input is very welcome).*
- *New builders: I'm always searching for pedals that are not on the site yet, and for new builders that are big enough or serious enough to be added. I've discovered quite a lot of interesting brands and really helped some of them get noticed. That's important to me—I really like how small companies (sometimes only one person) can be big in this industry that also includes a lot of huge multinationals.*
- *Interviews: I'm doing a big interview project focusing on effect manufacturers. I've conducted almost 300 interviews, and I post one interview a day.*
- *Relationships between pedals: I try to make associations between pedals ("based on," "clone of") to help visitors learn the background of each model.*
- *Links to brands: Where possible, I add links to the site and all the social profiles of the brands.*
- *Audio/video: About a year ago, I started adding audio and video from a lot of different sources, and I add links to new demos every day.*
- *Useful ads: Where other sites buy plug-ins or use scripts by eBay, Amazon, and other vendors, I made my own system to search for pedals on eBay (and that's worldwide—if you try a normal search on eBay, it still doesn't show all auctions) and use my own "logic" to rank these auctions. I may also add classifieds to the results, but some people are against that because it would lessen the chances for scoring good deals, so I'm still not sure about doing this. When possible, I include related auctions in the right column and there's a link to pages with many more results. I've received messages thanking me for that column because buyers got a good deal or found something they were looking for. I don't think a lot of other sites get thanked for ads! [**Author's note:** Beware of this feature, as it can put a serious dent in your PayPal balance. Many times I've been looking for one pedal and found something completely different but equally desirable in this right-hand column—something I simply had to acquire!]*
- *Referrals: I also link to brands' Etsy and BigCartel web shops and link to the relevant products there from the respective pages on FXDB. This takes some time to do and I don't earn any referral fees—I simply like the idea of buying directly from the builders.*
- *Clever search features: Recently I added some new categories (under effectsdatabase.com/special) for people who just want to look around without searching for anything specific: Classics, Eye Candy, Funny, Vaporware, etc. I still have to add more pedals to these categories.*
- *Future growth: I have many more ideas for features and want to add much more media (including demos from my own pedal collection and vintage documentation from my archives), but it all takes time to do that on my own and in my spare time (I have a full-time job and family, as well). There will be a great new feature in a few months, which I'm working on now, and I think folks will appreciate it.*

If you're looking for info on stompboxes, check out effectsdatabase.com. This free, non-commercial site contains a wealth of stompbox lore.

Whether you're looking for info on a rare or vintage effect or hoping to actually add one to your collection, I highly recommend effectsdatabase.com for its informative, voluminous content and clever, useful search features. Few people have shown such dedication and affection for effect pedals as Bart Provoost. Let's help him make FXDB a household name amongst pedal junkies worldwide!

KEVIN BOLEMBACH *is the president and founder of Godlyke, the U.S. distributor for many well-known boutique effect brands, including Maxon, Guyatone, EMMA, and Providence.*

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SUM OF THE PARTS GUITAR BY JOL DANTZIG

The sheer volume of aftermarket guitar parts is mindboggling, and it can be daunting to sort through all the offerings. There are upgrades, modifications, replacements, and add-ons for *everything*. If you want to build anything from scratch or from a kit, don't worry—the parts are out there. But while parts purveyors attempt to flag down your wallet with promises, it's often hard to find solid, reliable information. How then, can guitarists make sense of all the options at their disposal? Let's take a look at how to proceed on a parts-based guitar build.

Whether you're building from scratch or performing an upgrade or mod, there is no shortage of aftermarket guitar parts available for your project. Following simple guidelines may help you avoid disappointment down the road.

Start with the Basics

A good plan is to always *have* a plan. As much as I enjoy starting off in a direction without a destination in mind, I realize it's not for everyone. So I usually reserve that kind of methodology for my personal projects.

Some guitar builds center around achieving a certain tone. Maybe you'd like to add a twangy, rockabilly voice to your choir of instruments. Other projects are based around cosmetics, where the instrument's look is the driving force behind your selections. I've even built guitars for durability—ones you could throw into the car without a case. It really doesn't matter what your goal is based on, as long as you keep your eyes on the prize. Just be honest with yourself and stay true to your goal with *most* of your choices along the way.

Solicit Input from Those Who Know

I didn't know much when I started out, but an older, wiser man named John Montgomery did. I held my tongue except to ask questions. Surrounding yourself with talented people is the best way to raise your game in any situation, unless you think you know it all. If you believe this is a waste of time, please let me know how things work out in 10 years time.

Get Quality Stuff

If your goal is to find out how cheaply a guitar can be built, you can skip this step. Otherwise, pay attention to the reputation of a vendor's wares. Additionally, almost every parts maker will carry a wide range of similar components in order to meet varying budgets. Just because the brand name has clout doesn't mean all of their parts are at the same level. And just like your project, manufacturers pick and choose their battles when it comes to the makeup of their line. They say that you don't *always* get what you pay for, but in the real world, a price tag is often the report card.

Double-Check Specs and Compatibility

Not every part is meant to go with every other component, so be certain of measurements. Things like potentiometers and knobs are available in different spline and shaft specs and won't always cohabitate. Also, just because parts *fit* does not mean they will work together. Make certain that the neck you order is the correct scale length for the body you have. Otherwise, the bridge won't be in the correct place. While most tuners are compact enough to work with any headstock layout, that's not always the case. Be certain the clearances are big enough to allow parts to fit or you'll have to cut and file them to make it work. If a parts supplier doesn't provide clear drawings and size specifications for their parts, do not assume they'll be okay just because they appear to be correct. The money you save will be worth it.

Lay Everything Out First

It's tempting to begin before you have everything in hand, but this is where a lot of things go wrong. Even if this is just a routine build that you've done before, it pays to put all the parts together in a "dry fit" before you commit to major work. This gives you a last chance to evaluate your choices as well.

Surrounding yourself with talented people is the best way to raise your game in any situation, unless you think you know it all.

Because parts suppliers will change specifications or even make wholesale mistakes, it's better to check everything while you can still send parts back for an exchange or refund.

Don't Try to Do It in a Day

One sure way to get more building experience is to proceed too quickly. This will allow you to go back several times to repeat your lesson. I used to work with a guy whose only focus was speed—he even rushed everywhere he walked. As far as I know, he's still at the same place making the same mistakes. Take your time and follow instructions. Enjoy the process and savor the learning experience. Even if your guitar doesn't meet your expectations, you've still had a good time!

JOL DANTZIG *is a noted designer, builder, and player who co-founded Hamer Guitars, one of the first boutique guitar brands, in 1973. Today, as the director of Dantzig Guitar Design, he continues to help define the art of custom guitar. To learn more, visit guitardesigner.com.*

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"WEREWOOD"—FACT OR FANTASY? BY ERVIN SOMOGYI

Luthiers will generally agree that the acoustic guitar's soundboard is the soul of the instrument. And they will choose a soundboard's wood with care by considering such factors as species, grain count, color, age, provenance, grain evenness and orientation, weight, and stiffness. Popular choices for topwoods have traditionally included Sitka spruce, Engelmann spruce, Western red cedar, Italian alpine spruce, fir, redwood, pine, German spruce, red spruce, Adirondack spruce, sinker redwood, sinker spruce, and—with steel-string guitars—even koa and mahogany. With all the choices available, there is an endless debate about which topwood is "best" and how to properly use it.

I've been making guitars for a long time, so I too participate in this debate. *My* approach to the selection of the topwood relies on a favorable stiffness-to-weight ratio—not so much on the grain's evenness, count, color, etc. To me, the wood's weight is critical and half the formula. I've sorted through many thousands of topwood sets in the last 40-plus years, and the range of their densities has never failed to impress itself on me.

The same has also been true of the many piles of spruce and cedar planks I've sorted through to made selections from. I've handled planks so heavy that they seemed fresh-felled and still full of water. And they'd be next to planks that were so light, you could sneeze and they'd practically blow off the pile. But these are woods of comparable size that had been kiln-dried together, so the moisture content would have been the same. I assumed this disparity was all normal and natural, until I learned about a European tradition of forestry based on the practice of cutting down woods at specific phases of the moon. This practice of wood felling is built on many centuries of empirical experience and observation, and it yields woods of consistently different density, durability, and working properties.

Wood that is felled in accordance with lunar cycles is referred to as "full-moon wood," though somehow, I'm always tempted to think of it as *werewood*. Whatever one wants to call it, the fact is that our modern traditions of cutting lumber—which are not at all based on cutting woods selectively, in limited quantities, or for specific uses—have paid no attention to this practice. Our enterprises will cut day and night until the acreage has been clear-cut and the wood taken away by industrial containers, before moving on to the next acreage.

When you encounter an old acoustic guitar that sounds magical—like this 1941 Gibson ES-150—it's tempting to speculate why. Is it due to vintage construction techniques? Decades of string vibration? Or could werewood actually play a role? Photo by Andy Ellis

The back story on full-moon wood is quite interesting. Since before the start of the 1st millennium AD, foresters have noticed that the woods they cut yielded different working properties and durability as a direct function of where in the lunar cycle the woods were felled. Woods of any one species cut during the new moon, the full moon, or the waning moon, have consistently and predictably produced different results. Therefore, a number of especially advantageous uses for timber—including guitar tops—have been correlated with specific felling dates. These woods for soundboards are available to luthiers and can be found through a simple search by using the keywords "full moon wood."

Some readers might be thinking that all this lore is sheer poppycock. Nonetheless, there are three points to consider that are hard to ignore. First, as already mentioned, the body of empirically collected wood-felling wisdom is very old. It applies to a range of practical wood uses as diverse as house construction, roof shingles, wooden chimneys (well, they had them in the old days), barrels for storing liquids, boxes for storing foodstuffs, firewood, plows, transportation of felled woods via river floatation, and of course, soundboards for musical instruments. In each case, woods felled at the appropriate phase of the lunar cycle may last longer, wear better, are more stable, are harder/stiffer or softer/more pliable, or are more fire-resistant or burn more easily—as their intended use requires. This information is articulately set out in a searchable article titled *Lunar Rhythms in Forestry Traditions – Lunar-Correlated Phenomena in Tree Biology and Wood Properties*, written by Swiss forestry expert Ernst Zürcher.

The knowledge achieved through centuries of hands-on forestry practices has necessarily and predictably resulted in a body of oral tradition, peasant wisdom, and folklore. But there does exist a significant body of historical writing and record keeping in which lunar rhythms (as well as the cycles of the seasons) are mentioned as having an influence on the growth, structures, characteristics, and properties of plants. One of the earliest examples is from the Roman writer Pliny, who had suggestions about the cutting of plants and further advice for farmers regarding picking fruit for the market versus fruit for their own stores—all with respect to different phases of the moon. For the market, fruit picked just before or at the full moon would weigh more and be more profitable to sell. But for the larder and pantry, fruit picked during the new moon would contain less water and therefore last longer.

While Pliny and some of the other historical sources are indeed European, it has been noted that the general rules for felling woods in Europe are very similar across the other continents. Whether in the European alpine regions, the Near East, Africa, India, Ceylon, Brazil, or Guyana, these traditions all seem to be based on independent (but matching) observations. It's reasonable to believe that in the past, people had more time and more peace and quiet to observe how things work. Indeed, such knowledge would have been vital to them. We moderns are too caught up with television dramas, the rising price of gasoline, and the latest bodice-ripping revelations that emerge from Washington, Rome, Moscow, Damascus, or Beijing to notice how things grow.

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TAMING A FENDER HOT ROD DEVILLE BY JEFF BOBER

Hi Jeff,
First of all, let me say I really enjoy reading your column every month in the best guitar magazine on the market. I need to know how to "tame" my Fender DeVille—it is the loudest 60-watt amp I've ever heard and I'm not wild about the overdrive channel. I can never get my volume past 2 before everyone is yelling for me to turn it down. I've thought about replacing the 6L6s with 6V6s, but what I'd really like to do is put some KT66s in place of the 6L6s. (Of course, that won't help me tame the output at all.) Can you suggest any mods I can have done to help me with this problem?

From one Jeff to another, thanks and keep the great articles coming every month!
—J. Jeff Bissette

Fender's popular Hot Rod DeVille—a 60-watt 2x12 combo designed for portability and power.

Hi Jeff,
Thanks for being an avid reader of *Premier Guitar* and my column. Glad you enjoy the topics.

The DeVille series is probably the most successful in Fender's product line and the amps came in two incarnations: the earlier offering, the Blues DeVille, and the later version, the Hot Rod DeVille. The "updated" version was given more drive in the overdrive channel by tapping into an unused half of a 12AX7 preamp tube (V2B) in the Blues DeVille design.

On the surface this may seem like a good idea—make full use of a component that is already installed and give more gain to an amp whose predecessor may not have had enough overdrive to satisfy some rockers. While the result may have worked for some, it's obvious by your comment that it did not work for you, and I don't think you're alone. To me, this is an example of "just because you can doesn't mean you should." Maybe this idea could have been executed differently, but in my opinion, the way the extra stage was implemented in these amps results in a drive channel that's very "grainy" and not as musical as I'd like. You probably feel the same way.

Now I could just tell you to have your tech remove R 20 and R 25 and connect the signal input end of C 10 to pin 13 of K2B—but I won't. In theory, this would bypass the new circuitry associated with V2B, but there have been a substantial number of other circuit changes compared to the Blues DeVille, so I'm not sure the remaining Hot Rod circuit would be satisfactory enough to be worth the modification. At some point I may have the opportunity to perform this mod and I'd be very curious to hear the results. But for now, let's see if I can give you a few real-world suggestions to improve your amp.

Let's first address your dislike of the drive channel. I'd suggest trying different types of preamp tubes, particularly in the V2 position. Changing the gain structure in the amp with alternate tubes could possibly result in a more musical drive channel. Since it's the most readily available, you might first try installing a 12AT7 in the V2 position. This will reduce the gain in the last two stages of the amp prior to the phase inverter, but know that it will affect the clean channel as well, so you may need to raise the typical setting of your clean volume control.

If this doesn't yield acceptable results or you would just like to get more adventurous, try both an ECC 832 and ECC 823 in the V2 position. Each of these tubes has one half equivalent to a 12AX7 and the other half equivalent to a 12AU7, but they are mirror images of each other. This means that each one will reduce the gain in the opposite stage than the other and only one, as a matter of fact, will affect the clean channel. Hopefully one of these tubes will yield a better-sounding drive channel.

Let's move on to taming the amp's volume. Installing 6V6 output tubes in this amp is not something I'd recommend. The plate voltages typically used with 6L6 output tubes would be a bit too high to use with most 6V6 output tubes. That coupled with the fact that the primary impedance of the output transformer is more than likely lower than what is recommended for 6V6s, I'd caution against it. And of course KT66s, being similar to 6L6s, won't result in any significant power reduction.

One quick thing you might want to try is installing a 12AT7 in the phase inverter (V3) position. It won't reduce the amp's output power, but it will reduce the signal feeding the output tubes and may give you more control with the master volume. As far as reducing the power that's reaching the speaker, there are a couple of ways to accomplish this. One is to use a power attenuation device of some sort, such as a THD Hot Plate, Tube Amp Doctor Silencer, Rivera RockCrusher, Tone King Ironman, Dr. Z Air Brake, and Alessandro Muzzle. Inserted between the output of the amp and the speaker, these devices allow you to adjust your amp to the settings that sound and feel the best, and then attenuate the amount of power being sent to the speaker. This lets you control the overall volume. Some players get creative and mount these devices in the back of their combo, so the unit is always connected and ready to go.

Another way to reduce the output power of your amp is to use a device called a Yellow Jacket, which is designed by THD Electronics. These adaptors plug into the output sockets of your amplifier and convert the output tubes from the current 6L6s to EL84s. Doing this will reduce the output power of your amp from 60 watts to approximately 20-30 watts. This should provide a much more manageable power for smaller venues. However, this will also change the amp's sound. While 6L6s have an open, glassy tone, EL84s tend to be more compressed with a bit more midrange and less highs. Depending on what you're looking for, this could actually be an added benefit.

Well, there you have it—some simple, player-friendly possibilities to tame your amp. I hope one of them helps make your DeVille divine.

JEFF BOBER, *one of the godfathers of the low-wattage amp revolution, co-founded and was the principal designer for Budda Amplification. Jeff launched EAST Amplification in 2010, and he can be reached at pgampman@gmail.com.*

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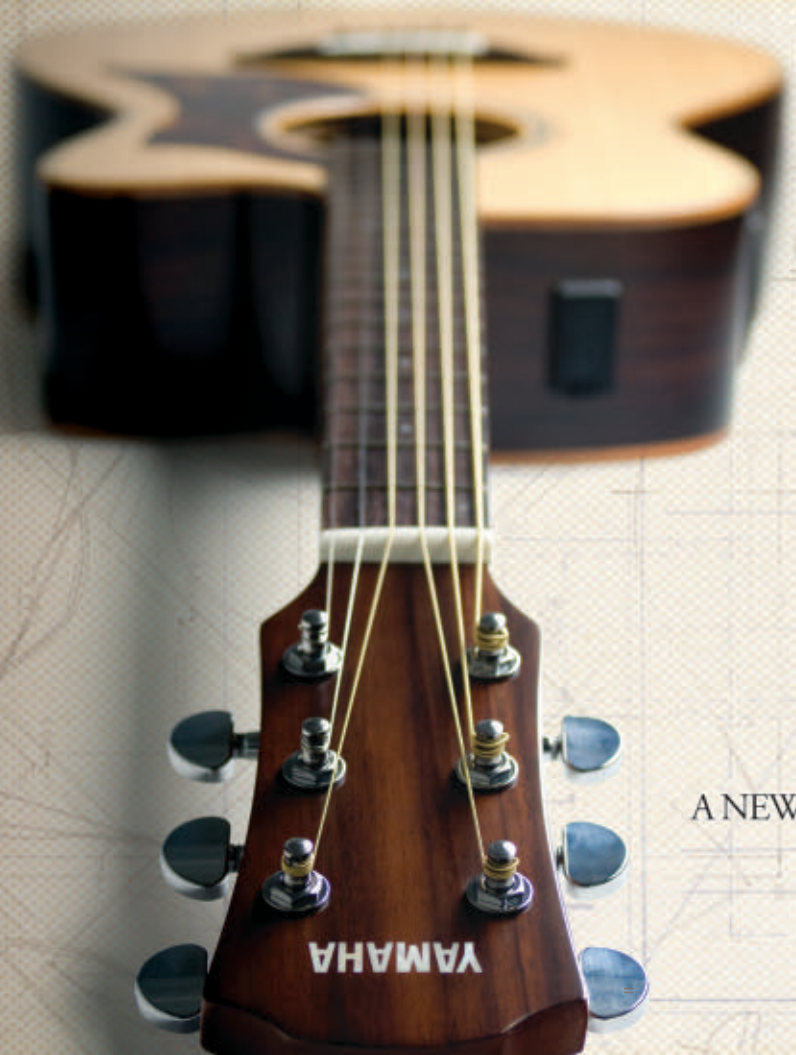

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THE ELDRED ESQUIRE WIRING BY DIRK WACKER

This month, let's continue exploring Esquire mods by diving into the so-called "Eldred Esquire wiring," which is currently one of the most popular wiring schemes for this iconic Fender model. The Eldred wiring is named after Mike Eldred, who directs the Fender Custom Shop. (This must be one of the dream jobs in today's guitar industry!) Mike came up with this wiring for his personal Esquire and it was an instant success.

In addition to managing the Custom Shop, Mike is also a great guitarist who gigs a lot with his trio, so he knows what a guitarist really needs. I had the pleasure of meeting Mike at one of the winter NAMM shows in California, and he's a very nice and funny guy, too. (Visit fendercustomshop.com and mikeeldredtrio.com for a closer look at Mike's work.)

Like so many other Esquire players, Mike doesn't like the stock switching position #3, which routes the guitar's single pickup through the volume control and a fixed "treble roll-off" capacitor/resistor network. Here is the switching matrix of his preferred system:

- **Switching position #1.** This rear position is the same as on a standard Esquire. The pickup is routed through the volume control only, with the tone control bypassed for a hotter, louder lead sound with extra highs.
- **Switching position #2.** This middle position is also the same as on a standard Esquire, with the pickup routed through the volume *and* tone controls. It sounds a little warmer than position #1.
- **Switching position #3.** In the front position of the Eldred Esquire wiring, the pickup is routed through a single, small capacitor and volume control, with the tone control bypassed once again. You might think this is a very small and lame modification because it consists of nothing more than removing the fixed treble roll-off network and replacing it with a capacitor. But it's a very effective mod that's both versatile and useful.

Adding the small capacitor and entirely removing the treble roll-off network gives this switching position a kind of "oh-oh" vocal quality and creates a scooped and hollow midrange that sounds nice and warm. This specific sound is also called the "cocked wah tone." When playing an Esquire that's wired this way, anyone with a wah pedal will immediately know why. Using some volume swells (the volume pot is still engaged in this switching position), you can completely mimic a wah pedal, once—like the great Greg Koch or Jim Campilongo—you master the playing technique.

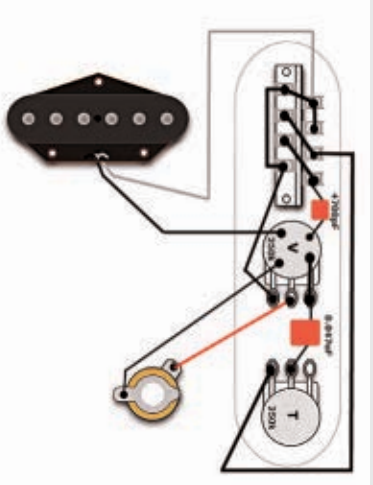
To hear how this switching works and sounds, you can watch a video from the Fender Custom Shop, where Mike walks you through his switching system on a relic'd '50s top-bound Esquire (YouTube search term: LTD Release '50s Top Bound Esquire Relic).

So what do you need to set up this switching? Not very much—just an additional 4700 pF (0.0047 µF) capacitor and some wire. That's it. The project basically involves removing the treble roll-off network, throwing in the new capacitor, and moving some wires. Generally, this wiring sounds best with two 250k pots and a traditional Esquire/Telecaster bridge pickup. Mike actually prefers a hotter bridge pickup model with a more prominent midrange. **Fig. 1** shows the Eldred Esquire wiring schematic.

Adding the small capacitor and entirely removing the treble roll-off network gives this switching position a kind of "oh-oh" vocal quality and creates a scooped and hollow midrange that sounds nice and warm.

Even though the Eldred wiring is versatile and sounds great, it's no crime to customize it to your personal preference. Here are some ways to experiment with this wiring:

- Start with the 0.047 µF tonecap from the standard Esquire circuit and then experiment with the value and the type of the cap. In several earlier columns, I've discussed the various options in detail.
- Mike prefers a standard film/foil 4700 pF cap for switching position #3. You can experiment with the value of this cap to dial in the tone you want. A lower value than 4700 pF will result in more highs because less treble is bled to ground and vice versa. A good range to tinker with is 1000 pF up to 6800 pF, but naturally you can use any value you like.
- Another excellent area to experiment with is the type of cap you choose to replace the stock treble roll-off network. You can try ceramic, film/foil, paper-in-oil, paper waxed, silver mica, Styroflex, or anything you would like to try. Personally I prefer a 715P or 225P Orange Drop cap for this, because these caps also offer a prominent midrange scoop that perfectly supports the vocal "oh" quality of the tone. These caps really fit like a pair of old shoes with this wiring. But it can also be interesting to use a completely different cap (and value), making the "oh" sound more like an "uh" or "ah." I think you know what I mean!



The Eldred Esquire wiring schematic. Illustration courtesy of www.singlecoil.com

In next month's column, I'll share my personal custom version of the Eldred wiring and explain how the Esquire I use onstage is configured, so stay tuned. Until then, keep on modding!

DIRK WACKER *lives in Germany and is fascinated by anything related to old Fender guitars and amps. He plays country, rockabilly, and surf music in two bands, works regularly as a session musician for a local studio, and writes for several guitar mags. He's also a hardcore guitar and amp DIY-er who runs an extensive website—singlecoil.com—on the subject.*

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FROM STRINGS TO VOLTAGE BY HEIKO HOEPFINGER

So far in the short history of this column, we've discussed several ways to manipulate bass tone, yet carefully avoided naming or identifying the origin of this electric current—the pickup. A pickup converts the mechanical movement of our strings into an electric signal that we can modify and amplify. But how do we translate string movement into an electrical signal? Several ways to do this come to mind:

Piezo. In 1880, French brothers Jacques and Pierre Curie discovered the piezoelectric effect. Putting mechanical pressure on certain types of non-conductive crystals leads to a directly proportional, microscopic voltage.

Optical. Direct a source of light towards a moving string and use a photodiode—a semiconductor that converts light to an electric current—to sense these alternating moments of shade and light. The changes in the sensor give us a direct electric picture of what the string does. Ron Hoag displayed the first pickup of this kind at the 1969 summer NAMM show in Chicago.

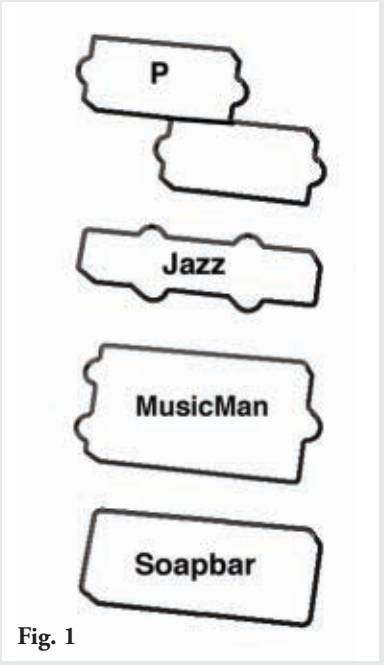


Fig. 1

Fig. 2

Fig. 1 The most popular bass pickup shapes in historical order from older (top) to newer designs. **Fig. 2** A single-coil pickup with magnets, bobbin, and final wiring.

Electromagnetic. A permanent magnet emits a magnetic flux. Moving a ferrous material in this field alters the magnetic flux, inducing a voltage in a wire that's wound around the magnet. While piezo pickups and optical sensors work with all string materials, the electromagnetic pickup is limited to ferrous ones. No problem here, as we typically use steel strings.

Technically, these pickups are all called transducers, as they convert one form of energy (mechanical movement) into another (electric current or voltage). I can't think of any more ways to convert a string's physical movement into voltage. (If you know of other ways, either contact me or head directly to your patent office. Don't mention microphones, as they are simply an electromagnetic transducer that uses more parts. And we won't count condenser mics either.)

Let's look more closely at these three types of converters, starting with the one we all *think* we know best, the electromagnetic pickup. Our bass pickups come in several shapes and sizes. You can see the most popular profiles in **Fig. 1**. The Precision and Jazz pickups started as single-coils, while the Music Man and soapbar pickups initially came as humbuckers. Today, with the huge replacement parts industry, you can't judge the number of coils simply by shape: There are humbucking P and J pickups, as well as single-coil soapbars. Another thing you can't see—at least as long as the battery cable is hidden—is whether a pickup is active or passive.

Due to their construction, humbuckers and single-coils can be classed as different types of pickups and both are known for certain tones—although the lines between these sounds are not that strict. Since the market offers thousands of magnetic pickups, there must be something else that sets them apart. The basic construction is very simple and their only parts are a permanent magnet and a coil surrounding said magnet. Add something that holds everything in place and voilà—you have a pickup (**Fig. 2**).

So what else can differentiate pickup models? Really it comes down to the material, number, arrangement, shape, and size of the permanent magnet(s) and the material, diameter, and number of turns of the wire that forms the coil.

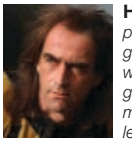
Do these variables justify the existence of thousands of pickup models? While preparing to write this month's column, I dug much deeper into this subject than I'd initially intended, and ended up re-reading a few hundred pages on electrodynamics and magnetism. This is an extremely interesting area of physics, but did it help me better understand pickups? Yes, but not as one would think.

The magnetic pickup is surrounded by a cult—a land of mystical promises and nebulous PR. Add the word *vintage* and it gets even stranger—and *way* more expensive. We deal with voltage and current all the time, from the 12V power in cars to the 110V or 220V outlets in our homes. We've all dealt with electric shocks, so we know its there, but we rarely see or feel the power or reactions of magnetic forces. The physics can be extremely complex, and those who really understand these forces rarely end up winding pickups. Hence, marketing guys can tell us almost anything.

There are no tricks for making the perfect pickup. The Holy Grail doesn't exist and every advantage has its drawbacks. Does it help to swap pickups? Yes, sometimes. But why begin with the most expensive component on your instrument? It makes more sense to start with the surrounding elements and investigate pot load, cable quality, and circuitry.

You might want to re-read "Maxwell's Silver Hammer of the Gods"—the March 2012 *PG* column by Gregg Stock about passive pickups. As bassists, simply ignore the word "guitar"—the physics behind bass pickups is the same—and try to understand some of the interdependent factors Stock describes.

In the end, you can just stay with what you have, or fall for the advertising, or start to experiment and educate yourself. If you're interested in the latter, stay tuned because we'll be looking at a few guidelines in upcoming columns.



HEIKO HOEPFINGER *is a German physicist and long-time bassist, classical guitarist, and motorcycle enthusiast. His work on fuel cells for the European orbital glider Hermes got him deeply into modern materials and physical acoustics, and led him to form BassLab (basslab.de)—a manufacturer of monocoque guitars and basses. You can reach him at chefchen@basslab.de.*

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2000 REVEREND BUG-EYE SLINGSHOT BY WILL RAY

About a dozen years ago, I was walking around at the summer NAMM show in Nashville when I spotted this guitar at the Reverend booth. It just seemed to jump out at me. At the time I was also going through what I call my "P-90 period," where any P-90-equipped guitar was on my radar screen. I talked to the owner of Reverend, Joe Naylor, and he explained that he had been experimenting with some industrial metal finishes when he created this series. I ended up buying this one, as well as another metal-finished guitar sporting a different design. Joe was a Hellecasters fan and sold them to me wholesale, and I had him ship them to me after the show. The guitars were roughly $600 each, not exactly Bottom Feeder prices, but I have a hunch they will one day be collectable guitars. So it's an investment, right? (Yeah, right. Whatever you say, Will.)

When they arrived I was excited about the look of both guitars, especially this one with its cool "bug-eye" pattern on the metal. A lot of players will tell you that guitars need to be all wood to sound good. Those people would be wrong. I have played many all-metal guitars that sounded every bit as good as their wooden counterparts. Just pick up one of James Trussart's metal-body guitars and you'll see what I mean.

The guitar deserves to be in the Museum of Modern Art, but it also begs to be played.

What I especially found interesting about this guitar was the shielding characteristics of the metal top and back. As you may already know, P-90s are single-coil pickups and are subject to the same annoying hum and noise associated with other single-coils. But this guitar only has about half of the usual noise, and I attribute this to all the metal surrounding the pickups and controls. The bug-eye metal sheeting covers not only the front of the guitar, but also its back. You'd think the guitar would be heavy with all that metal, but it's not. It weighs just 6 pounds and is very resonate and lively. I also like the flat 15"-radius fretboard and the jumbo frets—perfect for a lot of string bending and low-action slide playing. The middle pickup is reverse wound for further hum canceling, but I find it to be mostly unnecessary due to the guitar's already quiet nature. It has a very warm P-90 sound, but also has some Telecaster bite when you need it.

For me though, the most appealing feature is the design itself. The body, pickguard, and even headstock are all tied together by the well-placed angles and visual lines. The bug-eye pattern provides the perfect contrast to the pickguard. The guitar deserves to be in the Museum of Modern Art, but it also begs to be played.

RIGHT: Equipped with a trio of P-90 single-coils, this Reverend Slingshot sports metal plates finished in a radical "bug-eye" pattern. All the metal surrounding the pickups and controls reduces typical single-coil hum by about half. **ABOVE:** Though its entire back is also covered with sheet metal, the guitar is actually quite light.

Bottom Feeder Tip #667: Listen to your intuition when it tells you something. According to my wife Gayle, mine seems to say "buy this guitar" a lot. At any rate, I've learned to appreciate my intuition more and more over the years. Of course, soon I'll need to lease a warehouse to store all those "appreciations."

WILL RAY *is a founding member of the Hellecasters guitar-twang trio. He also does guitar clinics promoting his namesake G&L signature model 6-string, and produces artists and bands at his studio in Asheville, North Carolina. You can contact Will on Facebook and at willray.biz.*

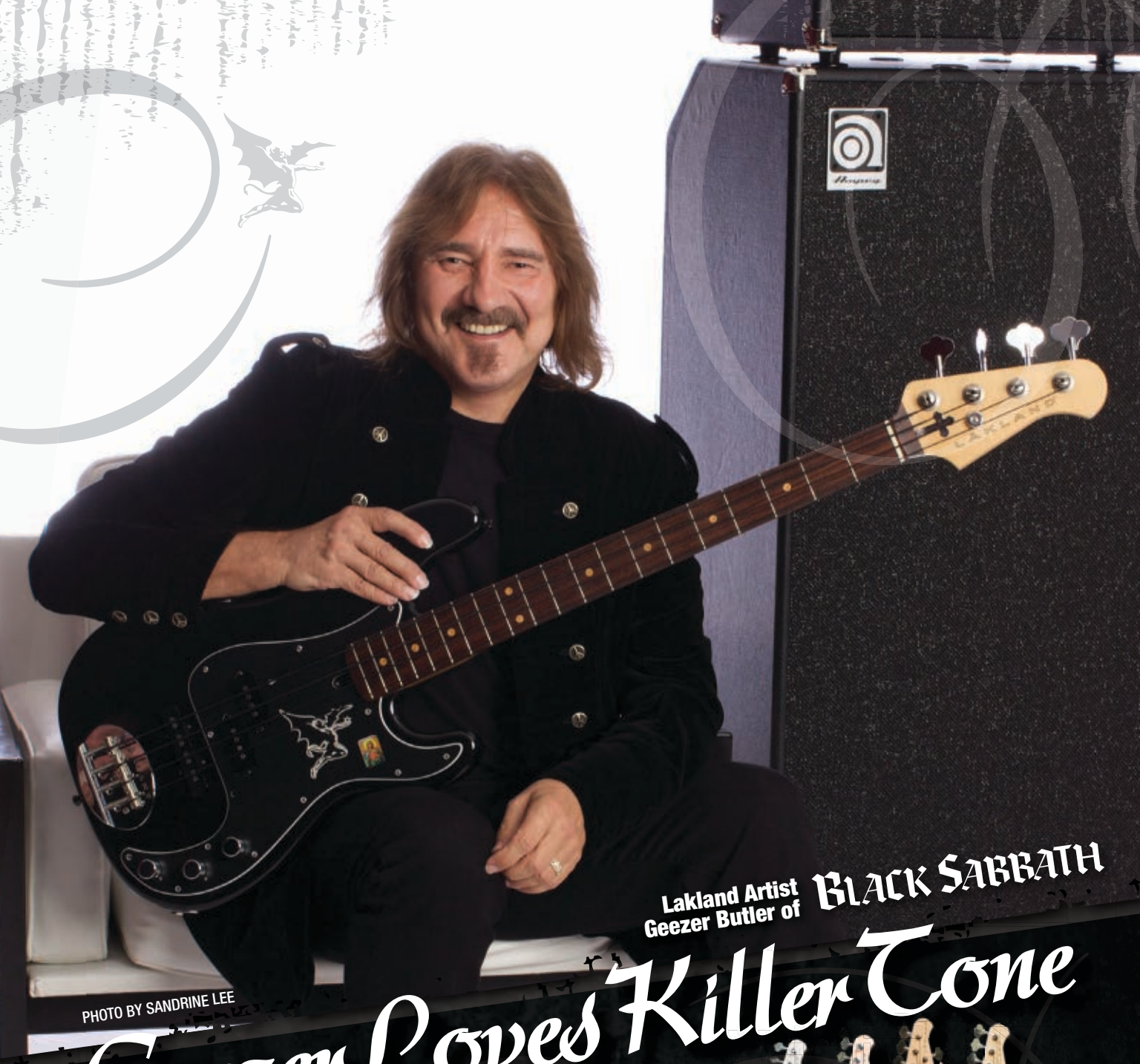

PHOTO BY SANDRINE LEE

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Geezer Butler of BLACK SABBATH

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1972 FENDER MONTEGO II

This 1972 Fender Montego II archtop was designed by Roger Rossmeisl of Rickenbacker fame.

BY DAVE ROGERS, LAUN BRAITHWAITE, AND TIM MULLALLY

In 1962, Leo Fender was continuing to devise ways to expand his company's line of musical instruments. Since Fender had revolutionized the solidbody electric guitar in the '50s, he was hoping to do the same with acoustic guitars in the '60s. He hired a German-born guitar maker, Roger Rossmeisl, to help design and execute these guitars. Rossmeisl had come to the United States in the late '40s hoping to build guitars for Gibson. After a brief, unsuccessful stay in Michigan, he moved to California, and contributed to Rickenbacker's most enduring electric-guitar designs before moving on to Fender.

Rossmeisl continued working at Fender Musical Instruments after its sale to CBS in 1965. He designed not only acoustics, but also the Coronado semi-acoustics and Tele Thinlines. In 1968, CBS gave him the go-ahead to design two high-end archtop electric jazz guitars: the LTD and the Montego. The LTD was supposed to be the ultimate jazz archtop and meant to rival John D'Angelico's masterful instruments. It had a carved spruce top, gold hardware, and one hum-cancelling pickup. The Montego was a step below with a pressed spruce top and chrome hardware. It was available in both single- and dual-pickup versions. Only a small number of these guitars were made between 1968 and 1972—about 40 LTDs and less than 100 Montegos. The Montego II pictured here has a hand-signed label numbered 92.

According to the 1969 Fender catalog: "A magnificent instrument for the professional or serious musician, the Montego combines both beauty and performance in a high-quality, great-sounding guitar."

As listed in the 1972 catalog, the Montego's specs included an "elegantly contoured spruce top, specially designed pickups with handwound hum-cancelling coils—totally shielded from outside interference, genuine hand-cut Australian mother-of-pearl decorative inlays, and the finest materials and workmanship employed throughout."

The Montego's detachable neck is made of hard-rock maple topped with a curved ebony fretboard, and its body boasts an arched spruce top with flamed maple back and sides. The 1972 Fender price list shows a Montego II Sunburst at $850, plus $95 for a case. The current 2012 market value is $2,500.

1. Australian mother-of-pearl decorative inlays and binding add elegance to the Montego's large headstock. **2.** The hand-signed label indicates this guitar was number 92 of less than 100 ever made. **3.** The simple, yet stately Montego tailpiece.

The sources for this article include *Fender: The Golden Age 1946–1970* by Martin Kelly, Terry Foster, and Paul Kelly; *The Rickenbacker Book: A Complete History of Rickenbacker Electric Guitars* by Tony Bacon and Paul Day; *Fender: The Sound Heard 'Round the World* by Richard R. Smith; and *The Fender Book: A Complete History of Fender Electric Guitars* by Tony Bacon and Paul Day.

Original price: $850 in 1972, plus $95 for hardshell case
Current estimated market value: $2,500

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Dave Rogers' collection is tended by Laun Braithwaite and Tim Mullally and is on display at:
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Photos by Mullally and text by Braithwaite.

EPIPHONE BROADWAY ARCHTOP BY ZACHARY FJESTAD

Hey Zach,
I noticed you haven't discussed any Epiphone archtops in your column before, and I think most readers would agree that Epiphone made some great archtops prior to getting bought by Gibson. I have an Epiphone Broadway with a serial number 610XX. It's all original, except for the strap button and the neck binding, but it does have some missing finish on the back and neck. Can you tell me a little about this guitar and what it's worth today?

Thanks,
Cam in Salem, Oregon

Hi Cam,
You're right. I haven't covered an Epiphone archtop before, so I'm glad you wrote! As you probably know, Epiphone's roots go back to 1873, when Anastasios Stathopoulo began building instruments in Greece. The family moved to New York in 1903, and when "The House of Stathopoulo" was incorporated in 1923, they immediately announced that "the new policy of business and all interest will be devoted to the production of banjos, tenor banjos, banjo mandolins, banjo guitars, and banjo ukuleles under the registered trademark name of 'Epiphone.'" The instruments from their elegant Recording line of tenor banjos are considered to be among the finest ever made. And they were joined in the late 1920s by a full line of Recording series guitars. In 1928, the company's name was changed to The Epiphone Banjo Company.

The Masterbilt series of guitars was introduced in 1931, marking Epiphone's entrance into the production of carved archtop guitars—based on violin construction principles. At the time of their introduction, the instruments in the Masterbilt series represented the most complete selection of f-hole guitars available from any instrument maker in the world (including Gibson). By 1935, the company was simply known as "Epiphone, Inc.," and has primarily been a guitar manufacturer ever since.

The Broadway was one of the original guitars in the Masterbilt series. And in terms of appointments, it is generally considered to be the "third-best" Epiphone archtop, behind the top-of-the-line Emperor (introduced in 1935) and the De Luxe. That said, the short-lived Tudor (produced between 1933 and 1936) is also considered to be a higher-level instrument than the Broadway.

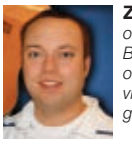
ABOVE: A 1951 Epiphone Broadway in mostly original condition. Manufactured until 1957, the Broadway is considered "third-best" in the Masterbilt series of archtops. **BELOW:** With a 17 3/8" wide body, these large Epiphones are considered to be some of the best production-model archtops ever built.

Based on the serial number, your guitar is a later version of the Broadway that was produced in 1951. Features of your guitar include a spruce top, curly maple back and sides, a 3-piece maple/mahogany neck, a 20-fret bound-rosewood fretboard, and pearl-block inlays. Other features include the bound headstock with a "center dip" and single flower inlay, a bound-tortoiseshell pickguard, a rosewood-based bridge, and the famous Frequensator tailpiece.

Like many guitars from this era, the Broadway went through a number of changes over the years. It started out with a 16 3/8"-wide body, but was widened substantially to 17 3/8" by 1936. The biggest change was in 1939, the year Epiphone switched from American walnut to curly maple for the back and sides. It should be noted that 1951 was the first year for the single flower inlay on the headstock, which replaced the vine design. The new (and less radical) f-holes were introduced in 1951 as well, and the Broadway remained in Epiphone's product line through 1957 when Gibson bought the company. Though this marked the end of production for the *acoustic* Broadway, Gibson actually produced an electric version until 1970, the year all Epiphone production moved overseas.

Your Broadway has a decent amount of wear from what appears to be normal playing. But it is mostly in all original condition, which is very important. The binding probably dried up and cracked on the neck, which is why it had to be replaced. And chances are the strap button simply broke. With everything else intact including the tuners, pickguard, and bridge, this is a good example of a mostly original-condition guitar with slight wear. Based on the overall condition and original equipment still remaining, it is currently valued between $2,000 and $2,500.

Many collectors consider the large-body Epiphones manufactured between 1937 and 1957 to be some of the best factory-built archtops ever produced. And you simply don't find many of them in this original condition. This is definitely a treasure you'll want to hold on to!



ZACHARY R. FJESTAD *is author of Blue Book of Acoustic Guitars, Blue Book of Electric Guitars, and Blue Book of Guitar Amplifiers. For more information, visit bluebookinc.com or email Zach at guitars@bluebookinc.com.*

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GLUING BRACES INSIDE A 1967 GIBSON B-45-12N

BY JOHN BROWN

The B-45-12 is a 12-string dreadnought that Gibson first introduced in 1961. During the '60s, such legends as Gordon Lightfoot, Leo Kottke, and Reverend Gary Davis made history strumming on their B-45-12s onstage and in the studio. Kottke liked the warm sound of the guitar's mahogany back and sides, and the B-45-12's adjustable bridge and ebony saddle made for a very playable 12-string. In 1963, Gibson introduced the B-45-12N, with the N indicating a natural finish, as opposed to the standard cherry sunburst on earlier models.

The guitar featured in this month's column was built in 1967 at Gibson's factory in Kalamazoo, Michigan. It features a Sitka spruce top, solid mahogany sides and back, a mahogany neck, a Brazilian rosewood fretboard and rectangular bridge, 3-ply celluloid top binding, and single-ply back binding. Other appointments include a tortoise-color pickguard, Kluson Deluxe 6-on-a-plate tuners with white plastic buttons, and a chrome-plated trapeze tailpiece.

This guitar's owner thought it might have some loose braces and brought it in for me to inspect. If you suspect that an acoustic guitar has loose braces—because you've observed structural issues or heard rattling noises—then every brace on the top and back needs to be checked inch by inch.

For the initial test, I like to gently tap on the top and back. Most of the time (but not always), I can hear if there are loose braces lurking inside. Even when acoustic guitars come in for just a basic setup, I like to thoroughly examine them. I'll automatically inspect the braces by peering through the soundhole with a combo mirror and LED light (item #3225 from stewmac.com).

Other useful tools for examining braces include the telescoping inspection mirror (#0362) and the folding 3-piece inspection mirror (#5124)—a set of reflective acrylic panels you can fold up to get through the soundhole. Once the panels are inside the guitar, you unfold them to create a flat 7 1/2" x 12" viewing surface. Very slick!

Earlier '60s editions of the B-45-12 had issues with construction. The guitar's dainty bracing allowed for more tonal projection, but because they had a pin bridge, rather than a trapeze tailpiece, early B-45-12s often pulled apart—especially when tuned to concert pitch.

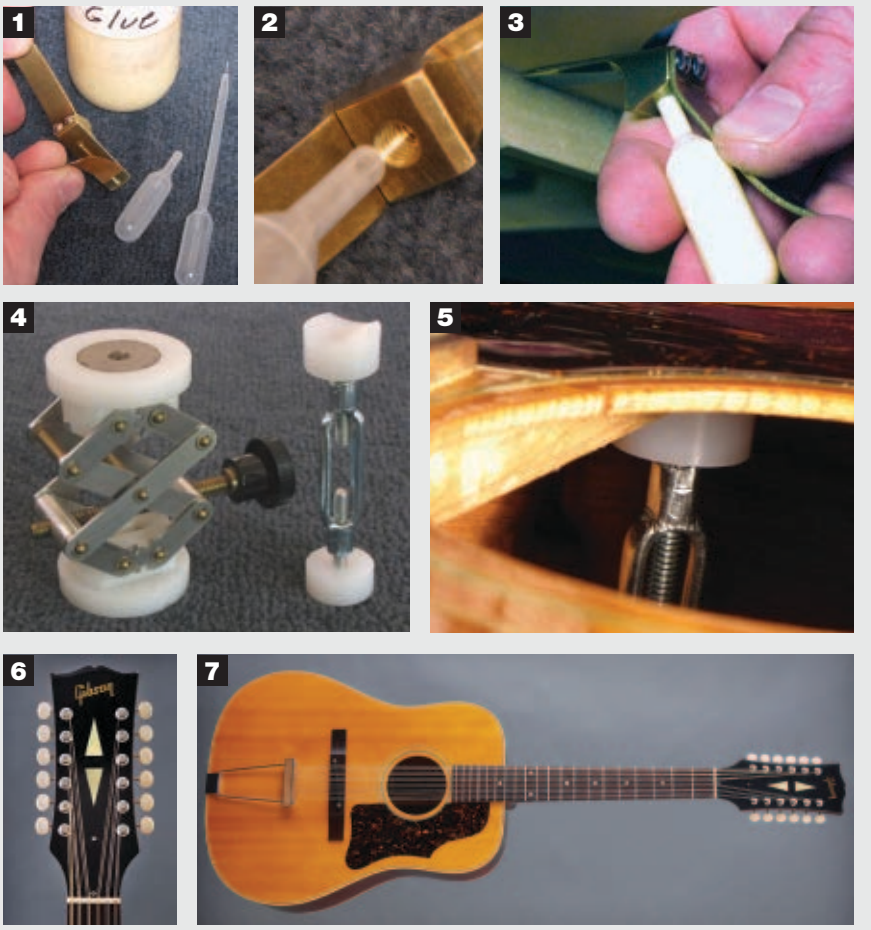
Luckily for the owner of this guitar, his instrument had a trapeze tailpiece. Once I inspected the braces, I found only a 1" end section of an upper face brace that was loose. Overall, that was a minor repair compared to what it could have been.

I was delighted that this project gave me an opportunity to try out a new tool I'd just purchased from Stew-Mac. Designed by Dan Erlewine, it's called the brace gluing wedge (#0200). You use this tool to gently shim open the gap under a loose acoustic guitar brace and inject glue right into the gap.

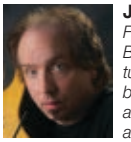
Before using the brace wedge on the B-45-12, I did a dry run and practiced positioning the brace repair jack (#3544). For this repair I also used a scissor jack (#0490)—a fantastic tool that lets you clamp areas that your arm can't reach when working through the soundhole.

After filling the brace wedge's pipette with Franklin Titebond glue (#0620) and gently squeezing the bulb to inject the glue into the gap, I set up a single brace jack to clamp everything back together. The final step was to carefully wipe up any remaining glue squeeze-out.

Once the glue had dried, I removed the jack and strung up the Gibson 12-string. Tone is so subjective, but to my ears, this Gibson B-45-12N has an awesome sound with glorious sustain. It was wonderful to get the instrument back into top sonic condition.



1. Using tape to determine the size of the gap that needs to be glued. **2.** Threading the stem of the trimmed pipette into the brace repair tool. **3.** Applying Titebond glue between the top and brace using this specialized tool. **4.** The scissor jack and brace repair jack make it much easier to hold and clamp braces. **5.** Positioned inside the guitar, a single brace repair jack clamps the upper face brace to the top. **6.** The 12-string's elongated peghead features two triangular pearloid inlays, which look particularly cool under the yellow tint of the aged nitrocellulose lacquer. **7.** What a beauty! The restored '67 Gibson 12-string.



JOHN BROWN *is the inventor of the Fretted/Less bass. He owns and operates Brown's Guitar Factory, a guitar manufacturing, repair, and restoration facility staffed by a team of talented luthiers. His guitar-tool and accessory designs are used by builders all over the world. Visit brownsguitarfactory.com or email John at info@brownsguitarfactory.com.*

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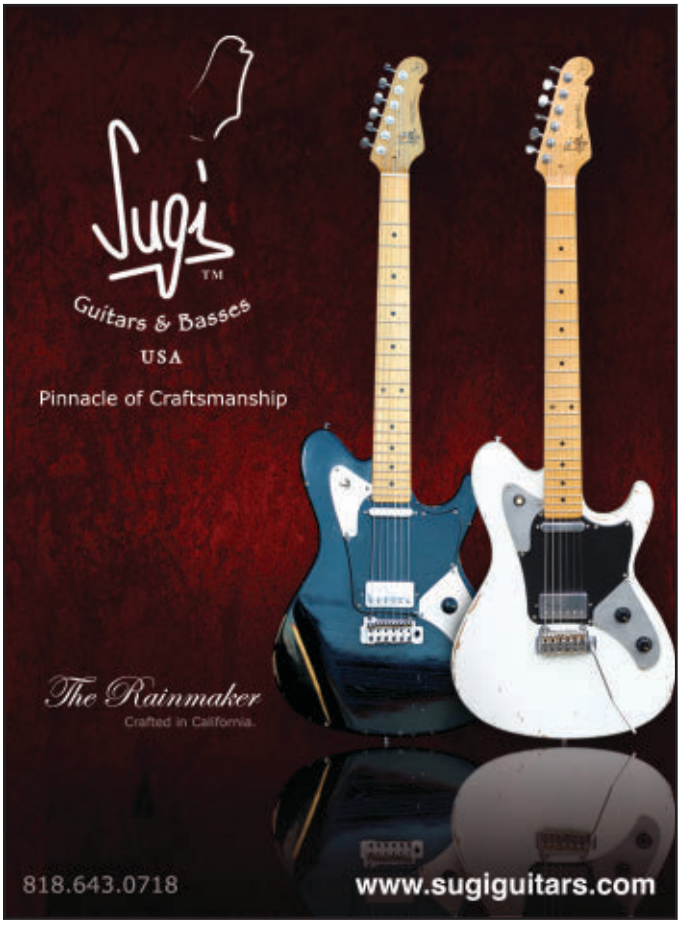
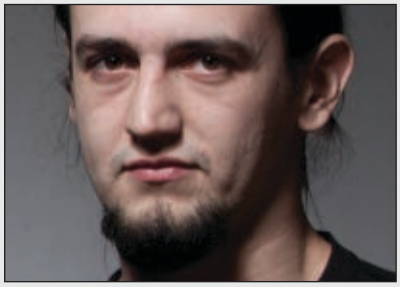


The 12-Tone Shuffle



BY AJ HARVEY

For the last eight years, AJ Harvey has been a member of the video game-inspired metal band Last Chance to Reason. Their latest album, Level 2, *is full of mathcore riffs, face-melting chops, and even contains a* Metroid*-style video game. For more information, visit facebook.com/lastchancetoreason.*

CHOPS: Advanced
THEORY: Advanced
LESSON OVERVIEW:

- Understand how to create and use 12-tone rows.
- Develop musical motifs by altering tone rows.
- Combine string skipping and octave displacement to create angular lines.

CLICK HERE
to hear sound clips of these examples.

It isn't uncommon for me to write tunes that are often based on all 12 notes. The notes are organized in the order of how my ear likes to hear them. Also, I don't repeat a note until all the other notes are played. I write one at a time, carefully listening to the interval between each note and the next, the same as anyone would when composing a melody. I like writing with 12-tone rows because it gives me my own unique voice.

Arnold Schoenberg (1874-1951) is the foremost 12-tone composer—he was writing 12-tone tunes in the 1920s! Frank Zappa composed some songs using this technique, and Ron Jarzombek is a modern metal composer who routinely uses tone rows in his compositions.

Last Chance to Reason—the band I play in—has always been a little outside of the ordinary when it comes to tonality. We've always used dissonant sounds we may have picked up from extreme genres such as prog and metal. Our drummer, Evan Sammons, and I decided to write some 12-tone music in 2006 for our first album, *Level 1*. Most of that record contained various tone rows, their inversions, retrogrades, and rhythmic variations. Less that 10 percent of the record consists of tonal melodic music. Our next record, *Level 2*, used tone rows extensively, but transitioned from them into more harmonic and melodic sections.

To compose a row, I often write down all the notes of a chromatic scale, from A through G♯. As I compose the row on my guitar by ear, I cross out the notes in the chromatic scale and write the note names of my new melody below the chromatic scale. The intervals or distance between each note give my tone rows a distinct sound. Like other melodies, not every tone row will sound good. Mine are carefully composed one note at a time and reworked until the whole melody rocks.

Fig. 1

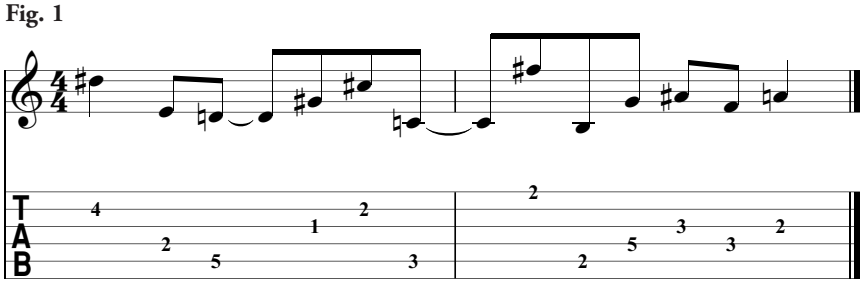


Fig. 2

Shown in **Fig. 1**, the tone row in "Upload Complete" uses a combination of my favorite intervals, or movements, to make up a heavy melody. This line is used in many variations throughout the tune. In order to critically analyze how these lines are composed, you are going to need to be pretty solid on your intervals.

There are a few intervals I want to highlight here. The first one is the distance between the first two notes—a major seventh. This is a very modern and powerful sounding interval. The last two notes of the first measure outline a minor ninth, which is probably my favorite melodic movement. It seems to be very popular with the more rhythmic metal and djent bands. Going into the second measure we have an augmented eleventh, which is the largest jump so far. This is what is referred to as a *compound* interval. A compound interval can be considered two intervals stacked on top of each other. In this case, we have an octave plus a tritone between C and F♯ an octave higher.

The intro phrase in "Upload Complete" is shown in **Fig. 2**. Our drummer Evan and I combined five or six motifs to make a grooving rhythmic phrase. A motif can be thought of as the smallest form of a musical idea, and a group of motifs make up a phrase. Each of these motifs used three or four notes from the tone row.

This is a more musical way of developing a tone row than anything on *Level 1*. I like to call it a *motifically developed tone row* because three- or four-note motifs are repeated and expanded upon until the notes are used up. It then resolves with the tone row in its entirety.

If we start to dissect the phrase, it starts with the first four notes of the tone row repeated twice. Then, we go to the next two notes of the row, and back to the first group of four notes again. The double-picked 16th-notes go between the fifth and sixth notes of the tone row. At this point we add notes seven and eight to the phrase. After we make a four-note motif with notes five, six, seven, and eight, we repeat them and tack on the ninth and tenth notes. The last four-note motif of the riff includes the twelfth note. I skipped the eleventh because my ear didn't want to hear it.

Let's take a look at how we can vary a tone row to make it more interesting. The row shown in **Fig. 3** is from our song "In Portal."

Fig. 3

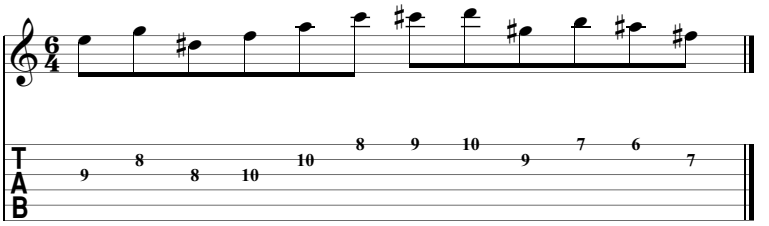


Fig. 4

Fig. 5

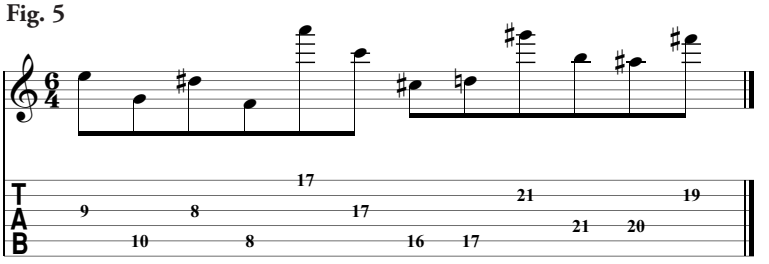
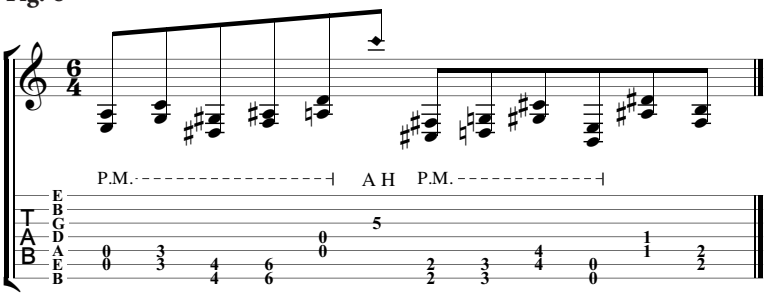


Fig. 6



This is the original form and each measure of the phrase takes a different approach, but keeps the order of the notes intact.

Fig. 4 is the same row transposed down an octave. It's a very simple idea, but the different fingering options give us some new patterns to work through. The third measure, shown in **Fig. 5**, is my favorite and the most challenging. We combine some string skipping with octave displacement to create a very angular sound. Applying octave displacement—where you just move certain notes in the phrase either up or down an octave—adds an instant sense of urgency and tension to your lines. I move to 7-string guitar for **Fig. 6**. In this measure I play the row down an octave and harmonize it in fourths.

Getting around writer's block is tough for any musician. Learning about 12-tone rows and how they function is a great way to compose a song because your melody instantly sounds original—and it likely is. In heavy music, there are a few techniques, sounds, and styles that most guitar players gravitate toward. If you use 12-tone rows to compose, your riffs will have a different sound and vibe from other songs you've written.

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Polyrhythmic Fundamentals

BY JULIAN LAGE

Julian Lage is one of those rare musicians who feels equally at home in acoustic and jazz circles. He has been a member of legendary vibraphonist Gary Burton's group since 2004, and also regularly collaborates with pianist Taylor Eigsti. Lage's latest album, Gladwell, *reflects his wide-ranging musical interests and talents by incorporating chamber music, American folk and bluegrass, Latin and world music, traditional string-band sounds, and modern jazz. For more information, visit julianlage.com.*

CHOPS: Advanced
THEORY: Intermediate
LESSON OVERVIEW:

- Develop basic polyrhythmic techniques.
- Learn how to superimpose different rhythms to make a "4-against-3" feel.
- Understand how accents can imply different time feels.

CLICK HERE
to hear sound clips of these examples.

For years, I have been fascinated by how my favorite players—Jim Hall, Bill Evans, Ben Webster, Doc Watson, and so many more—were able to play solos that propelled forward so effortlessly. Of course, what makes a great solo or composition is the convergence of harmony, melody, and rhythm into a unified narrative. However, there is something special about the way these players use rhythmic diversity to shed light on the inner workings of any given piece of music and give it an extra jolt of excitement. In the case of rhythm, I feel this can be traced to the quarter-note. In this lesson, I'd like to explore the world of rhythmic development, syncopation, and introduce the foundation of polyrhythms.

One of my favorite things about the way time works in the musical realm is that any given pulse has two sides. There is the attack and the absence of the attack—or the space between. One way to practice experiencing the full attack/negative space of every pulse is to set the metronome to roughly 30 bpm—or lower, if possible—and start playing a pitch or scale (for this lesson, let's say C major) with one note allocated to each click. In **Fig. 1** you can see an example of this.

At first, this may feel like you are playing musical darts, trying to pin down each beat as it passes by. However, with daily practice you'll start to feel like you can predict when the next click will come. The goal with this is to eventually transition from following the metronome to playing alongside it. Do this for several minutes or until you feel settled into the pulse.

The next step is to add the eighth-note subdivision, so that for every click, you play two notes, as you can see in **Fig. 2**. This is often easier because there is less time between notes. One thing you can do to help insure your notes are filling their full spectrum is to use your voice to make a sound between each note. By verbalizing a "click" or some kind of sound on the offbeats, the notes you are playing will start to lock in even stronger with the metronome pulse.

Now let's add some eighth-note triplets. After practicing this for a few minutes or until it feels steady, switch back to the eighth-note subdivision for a few bars, then back to triplets, and continue alternating for a few minutes (**Fig. 3**). You may find this forces you to envision the other subdivision prior to playing it, simply so you don't lose the pulse during the transition. This can feel like a tedious practice, but if you can spend 10 minutes a day on it for a week or a month, it will help greatly to lay a strong rhythmic foundation that grooves no matter how complex the rhythmic development may become.

Next let's look at syncopation. Start by playing sixteenth-notes—that's four notes for every click. Then begin accenting every fifth note, so after accenting the first note of the exercise, you will accent the sixth note, then the 11th, and so on. Check out **Fig. 4** for an example. This can sometimes be easier if practiced at a faster tempo, but I encourage you to stay with the slower tempos until you can speed up without losing

Fig. 1

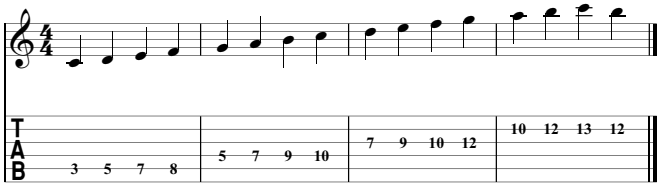


Fig. 2

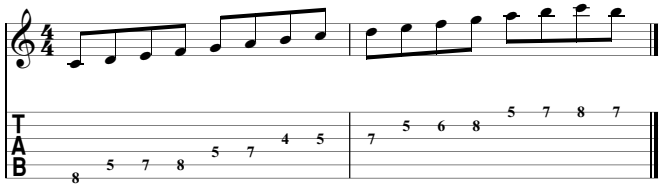
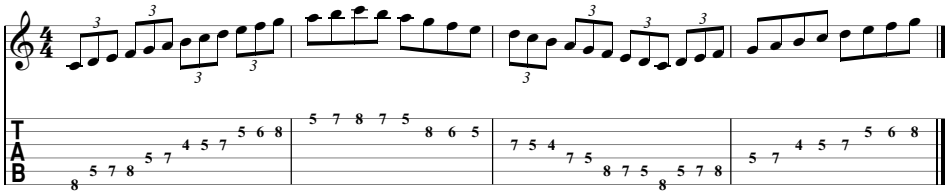


Fig. 3



a good feel. No matter how intricate the phrasing, the groove should always be an integral part of your awareness, and should you need a reminder, you can reset the feel by playing quarter-notes.

Once you feel comfortable syncopating every five beats, try breaking the five into two. In **Fig. 5**, you can see this concept using eighth-notes and sixteenth-note rests. It sounds a lot more confusing than it actually is, but this can provide a cool way to abstract the concept of groupings of five even further. Smaller subdivisions tend to make things feel quicker, where as larger subdivisions will give your lines a sense of a larger development over time.

At this point, I'd like to shed some light on the concept of polyrhythms and how to go about decoding them. I was always mystified by how players could superimpose other time signatures over 4/4 or 3/4. It was even more mystifying how they could switch between the time signatures with ease and fluidity. So given the techniques we've been practicing thus far, let's examine how to play 4 against 3.

The simplest way to start is by playing sixteenth-notes with the metronome on or around 60 bpm. We can start **Fig. 6** by syncopating every third note. Once this feels comfortable, leave out the in-between notes and only play the syncopated beats (beats 1, 4, 7, 10) After four syncopations, your note should line up with the metronome. You are now playing 4 against 3!

Things get really interesting in **Fig. 7**, where we play the quarter-note in the bass on a low C. Try moving the left-hand structure through the C major scale while maintaining the polyrhythm. This basic formula should help you to find other polyrhythms. To summarize: Start with sixteenth-notes, syncopate the number of beats you want to superimpose, then leave out the in-between notes and the two tempos should eventually meet up at regular intervals.

Going forward, I encourage you to practice "filling" the bigger quarter-note with other subdivisions including 5, 6, and 7, as well as figuring out other polyrhythms via the syncopation study. Between these two practices, you will develop a stronger sense of rhythm from a grounded perspective, and also be able to see that at any given moment, multiple dimensions of rhythmic activity exist and are waiting for you to explore.

Fig. 4

Fig. 5

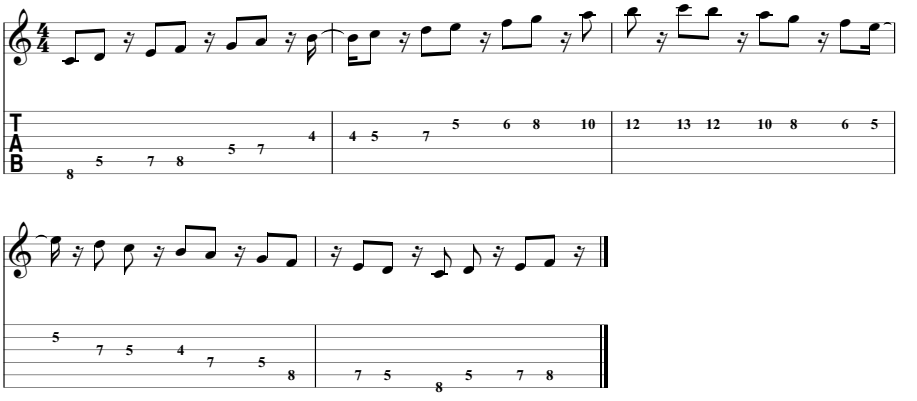


Fig. 6

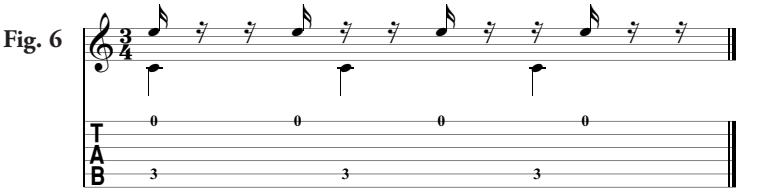
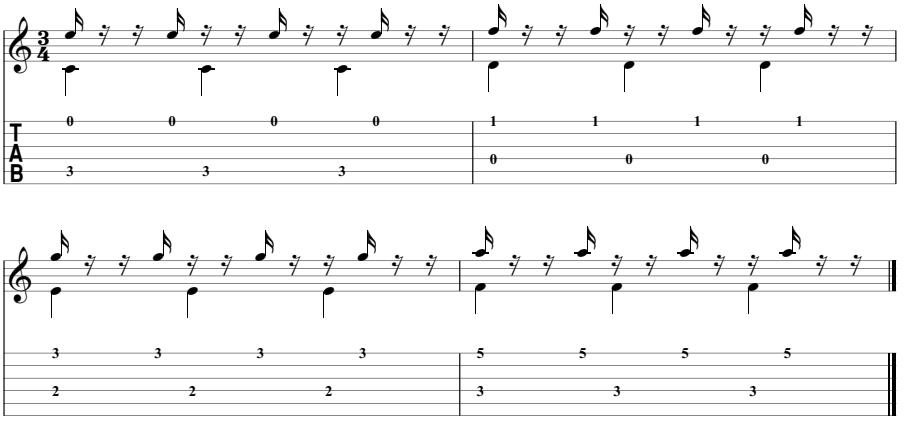


Fig. 7



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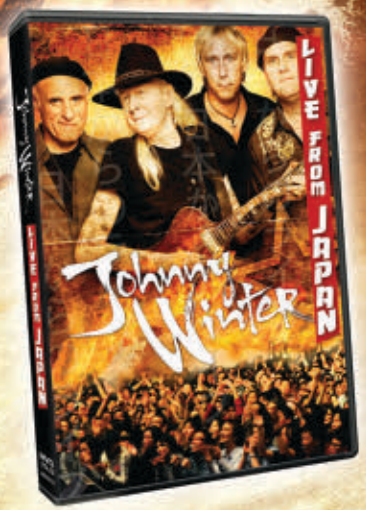

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Chicago Blues Primer

BY KID ANDERSEN

Currently the guitarist for Rick Estrin & the Nightcats, Kid Andersen has recorded and performed with Charlie Musselwhite, Elvin Bishop, and many other blues legends. Originally from Norway, Andersen is now based in San Jose, California, with the immigration status of "Alien of Extraordinary Ability." For more information, visit rickestrin.com.

CHOPS: Intermediate
THEORY: Beginner
LESSON OVERVIEW:

- Understand the essential elements of Chicago blues.
- Learn how to properly back up a harmonica player.
- Create "looping" phrases that build tension in your solos.

CLICK HERE
to hear sound clips of these examples.

I'm back to help you expand your blues vocabulary further, this time with some chords, partial chords, and chord voicings that you have to know if you're going to play lowdown Chicago-style blues right.

In the classic Chicago blues styles of the '50s and '60s, rhythm guitar and lead guitar melded together in a unique and intricate way. So in these examples, we'll expand your lead playing as well as your rhythm chops. In the classic bands of the era, such as the groups led by Muddy Waters, Little Walter, and Sonny Boy Williamson II, the harmonica was as much—or even more—of a dominant lead instrument as the guitar.

Many bands featured two guitars, like Robert Jr. Lockwood and Luther Tucker with Sonny Boy, Dave and Louis Myers with Little Walter, and Jimmy Rogers or Pat Hare together with Muddy in his band. Here's what's neat about everything I'm about to show you: When you turn up for your solo, all these chords and licks are *great* lead tools as well. Just listen to SRV soloing over any of his shuffles and you'll find traces of all this stuff.

The ensemble playing of the bands I'm talking about was very much a team sport. The guitar parts, harp parts, and piano parts could often be solos in their own right, but the players knew how to blend together to make *one* sound. Therefore, the first step is to *turn down your rhythm*.

You may say, "Hey, I *do* turn my rhythm guitar down." No, you don't. Not enough!

Blast your solo as loud as you want, but keep your rhythm guitar volume to a minimum. Always keep in mind that playing accompaniment too loud will not have the effect you may think, no one will be impressed, they'll just want to hurt you and for you to go away. That's enough philosophy—let's get down to some nuts and bolts, tricks and licks.

I know how much you all like licks, but bear in mind the words of the great American bluesman Sonny Lane, "Fk a lick!"**

We will begin by checking out the common chord shapes used during this era. In **Fig. 1** you can see a few options for E and in **Fig. 2** we do the same for A. Now we have the I and IV chords for a blues in the key of E. For the V chord just take any of the "A" shapes and move it up two frets. It's magic!

Let's start with a dirty shuffle rhythm using our basic open E chord and an inversion of a E6/9 chord in **Fig. 3**. We can use our new superpowers to simply move this shape up to the 5th and 7th frets for the IV and V chords, respectively.

Robert Jr. Lockwood was really the originator of most of this stuff I'm showing you. Both Lockwood and the sadly under-documented guitarist Reggie Boyd were pretty much the most well-rounded, virtuosic, and most knowledgeable players of the era, and many bluesmen of the time got a lesson, directly or indirectly, from these two guys.

Now that you have the basic chord shapes, it's time for some licks. I know how much you all like licks, but bear in mind the words of the great American bluesman Sonny Lane, "F**k a lick!" What I choose

Fig. 1

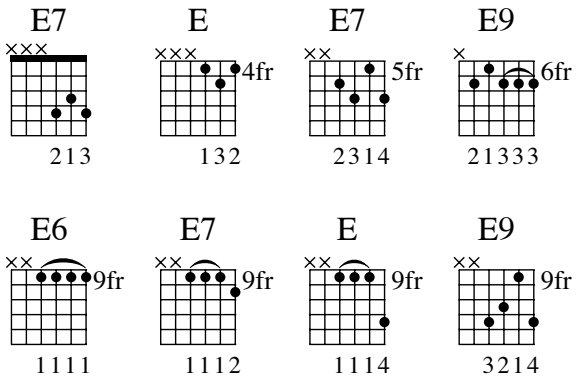


Fig. 2

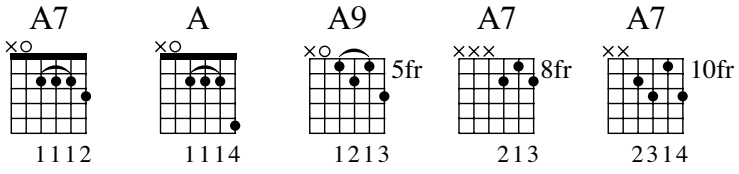


Fig. 3

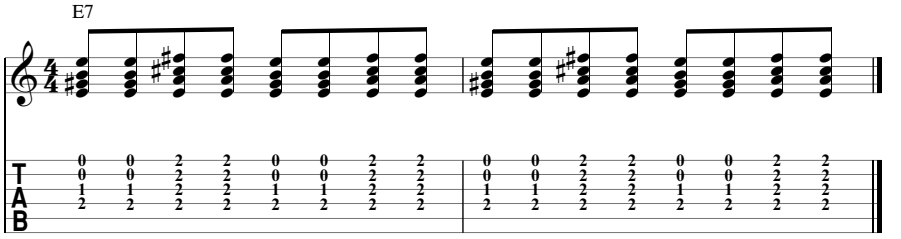


Fig. 4

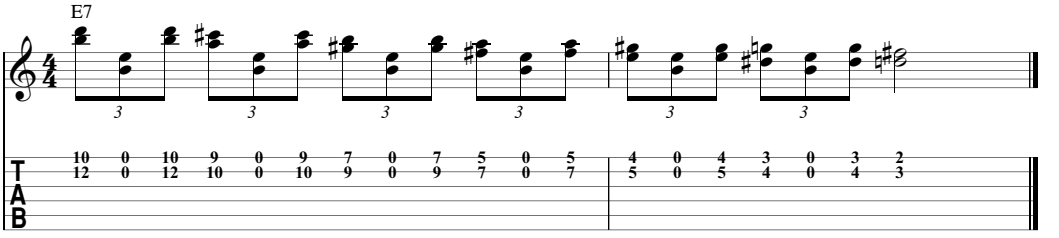


Fig. 5

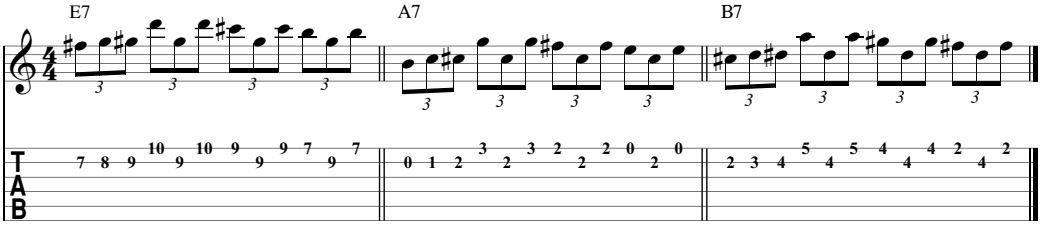
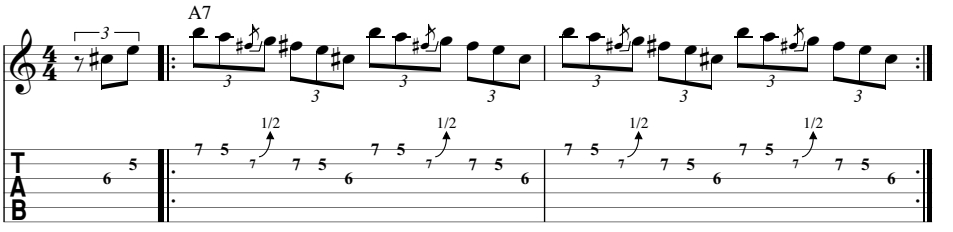


Fig. 6



to believe he meant was don't make up your mind about what to play until you are in sync with what's going on around you musically. Use your ears, not your licks! The lick in **Fig. 4** is a great way to segue from the I chord into the IV. For some extra vibe, add a slight palm mute and use all downstrokes.

I call the lick in **Fig. 5** a "looper." Once you get it going, you can pretty much go on autopilot for a while to build up tension. In the example, I have outlined how to play this phrase over the I (E7), IV (A7), and V (B7) chords in the key of E.

We have another looper in **Fig. 6**, and this time we will use it over an A7. The addition of the 9 (B) at the top of each phrase gives this lick a jump blues, or T-Bone Walker sound. Once you get this one swinging, it will be hard to stop.

Everything I've shown you here is not only great for big, powerful solos, but I have also started you on the path to learning how to correctly accompany a Chicago blues harmonica in a band setting. The difference? Easy, here are three steps:

1. Turn down.
2. Listen and complement the soloist.
3. See steps 1 and 2.

Being at the right volume is even more important than being in tune for this stuff!

For reference, check out any Little Walter compilation, or anything from the '50s by Sonny Boy Williamson or Muddy Waters. Those really playing this style very well today are guys like Rusty Zinn, Junior Watson, Billy Flynn, and Little Charlie Baty. You can also hear all these licks in the blasting blues-rock stylings of Stevie Ray Vaughan and his hordes of followers, all the way to sophisticated jazz-blues playing of dudes like Robben Ford and the great Chris Cain.

Listening to the rest of the musicians is key in a band situation. Good Chicago blues players weave in and out of the forefront, up and down the fretboard. For your solo, crank your amp and play all of this however you want, because then it's time for *them* to follow you. Don't forget to step out and put on your best blues face!

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Stumbling Block Rock

BY PAUL GILBERT

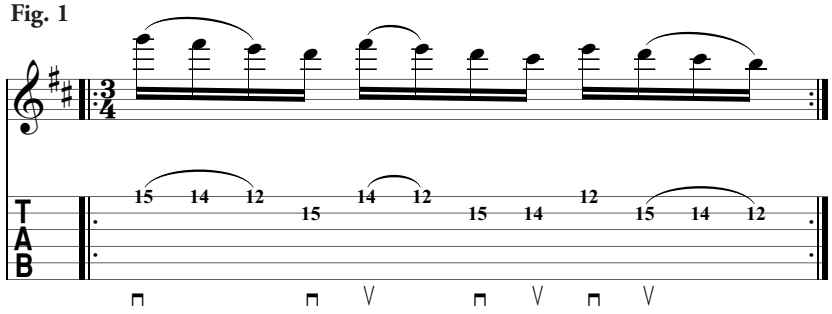
Paul Gilbert purposefully began playing guitar at age 9, formed the guitar-driven bands Racer X and Mr. Big, and then accidentally had a No. 1 hit with an acoustic song called "To Be with You." Paul began teaching at GIT at the age of 18, has released countless albums and guitar instructional DVDs, and will be remembered as "the guy who got the drill stuck in his hair." For more information, visit paulgilbert.com

CHOPS: Intermediate
THEORY: Beginner
LESSON OVERVIEW:

- Overcome the "major third" tuning barrier.
- Create lines that use a three-over-four pattern.
- Combine the Dorian mode and blues scale to craft exotic phrases.

CLICK HERE
to hear sound clips of these examples.

Fig. 1



You've probably heard the phrase "stumbling block" before. In my experience, a block is just one of many things that can be stumbled on. Guitar cables, bedposts, my own shoes, uneven sidewalks, and maybe worst of all …

The major third tuning between the 3rd and 2nd strings.

Just when you find yourself in a nice comfortable scale sequence, the transition between those two strings can leave your fingers in an unexpected tangle. Let's take a look at one of these potentially tangled-up phrases and find some solutions.

A common pattern that many musicians use is the descending "four." You play four consecutive notes in a descending scale. Then you start on the next lower step and do the same thing, and keep that pattern going until you reach some sort of bottom.

Yngwie Malmsteen and Michael Schenker are both masters of this pattern, and they tend to play it on a single string (usually the high E string). The good part about staying on a single string is that you don't have to deal with any kind of jumping to the next string. So the intervals between the strings become a non-issue. The only drawback is that the length and range of the phrase is limited. The "bottom" doesn't take long to reach. Yngwie and Michael usually solve this by making the transition to a different pattern that easily allows them to travel to the next string. And that is a solution that absolutely works. Check out Michael's solo in "Mother Mary" for a perfect example of this.

But what if you really want to keep this four pattern going?

Let's begin by playing a short version of it that uses two strings in **Fig. 1**.

My goal is to eventually play this at blinding speeds, but without having to "muscle through" it. So please take a close look at my suggested combination of picked notes and pull-offs. The pull-offs give your right hand some quick breaks, and it makes the overall sound of the lick a bit friendlier as well. It may take some time to program your picking hand *not* to pick everything, but just slow the lick down and take it in small sections until you can put the whole thing together and play it comfortably.

Now that you can play this first phrase, let's take another look at what it actually is. I like to think of it as a nice self-contained set—three groups of four on two strings. That's it. Now we're ready to build it into something bigger in **Fig. 2**.

This lick starts exactly the same way as the last one. But then it keeps going and going! The fingerings occasionally change from the original version to keep things within the Dorian-blues sound. And in the interest of keeping a consistent picking and pull-off pattern, I took some liberties with the starting notes of the pattern. But when you play through it, I think you'll see the method to my madness. The resulting sound is a satisfying and very long set of descending fours, with the potential to be very fast. And without the usual 2nd-to-3rd-string tangle-ups.

If you want to play Queen's "Sheer Heart Attack" with all downstrokes, you'll need some muscle. But these face-melting fours require very little punk power.

Finally, let's look at reversing this pattern and doing a version with *ascending* fours in **Fig. 3**.

This pattern is based on 16th-note triplets, instead of straight 16ths. Why? It just naturally started to sound like that when I played it, so I decided to keep it that way. And I like the four-played-against-three feel that happens in this case.

Again, please pay close attention to which notes you pick and which you hammer-on. Having those small breaks for your picking hand will make a huge difference in how quickly you can play the lick, and how relaxed you can be with your technique. If you want to play Queen's "Sheer Heart Attack" with all downstrokes, you'll need some muscle. But these face-melting fours require very little punk power. It's just a matter of practicing to get the strokes right.

Fig. 2

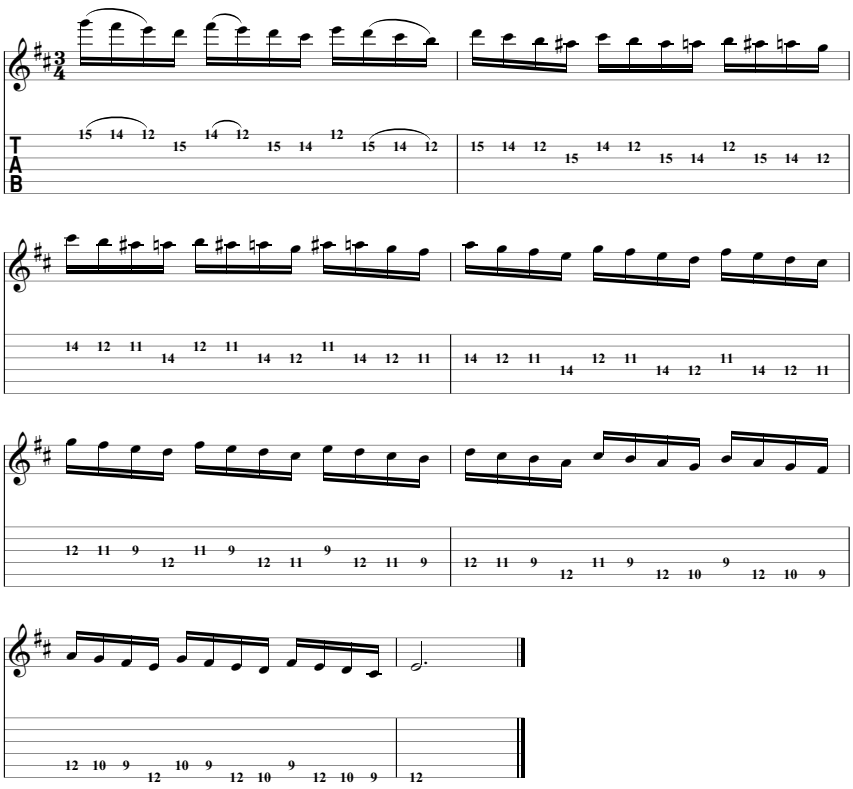


Fig. 3

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THE SHOW MUST GO ON

Guitarists Brian Gresh and Tristan Avakian are living the dream—handpicked by Roger Taylor and Brian May, they've been commissioned to bring one of the biggest rock shows to the stage for the Queen Extravaganza. BY CHRIS KIES

Photo by Patrick Beaudry

In the past few years, YouTube has become a multimedia classifieds for guitarists. It's opened doors for fingerstyle wizard Andy McKee, whose "Drifting" video has 44 million views, and ukulele phenom Jake Shimabukuro's "Ukulele Weeps" video has 10 million views. And for Queen Extravaganza's guitarists Tristan Avakian and Brian Gresh, YouTube might have assisted them in their best gig yet.

Queen Extravaganza is the official tribute band compiled with nine musicians—four lead singers, two guitarists, bassist, drummer, and keyboardist—to tour the US and Canada on the legacy of Queen's expansive canon. The finalists were picked via fan vote on YouTube, and from there the band was assembled by Queen drummer Roger Taylor with help from Queen guitarist Brian May and Spike Edney—live keyboardist and musical director with Queen since 1984.

"I was blown away in shock!" says Queen Extravaganza guitarist Gresh about being chosen for the show. After 16 years of playing guitar, he is now living one of his wildest dreams: performing on a nationwide tour. "Once I calmed down a bit, I called my parents and they didn't even believe me." [*Laughs.*] Gresh has worked as a mechanical engineer at T.D. Williamson in Tulsa, Oklahoma, since 2006—performing with his band Megatron on the weekends ... that is, until he submitted his video audition for "Killer Queen."

Queen Extravaganza's other guitarist, Tristan Avakian, is much more familiar with the music business. He's collaborated with Lauryn Hill, Mariah Carey, Biohazard, toured with Trans-Siberian Orchestra, and worked on Canada's *Rock of Ages* and Queen's *We Will Rock You*. "I feel honored that I made one of the two spots because Brian is my guitar hero—he's a legend," says Avakian. "I feel like Mark Wahlberg in *Rock Star* when he joins Steel Dragon and the band is doing the *cool* rocker poses and he can't stop smirking. That's how I feel every time I *think* about playing anything by Queen."

"Tristan and Brian complement each other so well," says May. "It's great to see the organic interaction, the body language, and the evolution of their relationship—both those guys are so giving, share such a joy when playing, and are so individually charismatic that something special is bound to happen when they perform."

Gresh and Avakian filled us in on their precarious auditions, what it was like to rehearse Queen songs in front of Taylor and May, and how gymnastics and guitar playing can go hand-and-hand. Bonus: Check out our special conversation with May on page 80.

How did you find out about the Queen Extravaganza contest?

Avakian: I actually heard about it from a *We Will Rock You* fan. I was initially reluctant because I'm just not a big fan of the gladiatorial competition in art or music. Then I had a conversation with Brian May and he let me know about Marc Martel's [Queen Extravaganza lead singer] video having millions of views and he said it'd be a great thing to try out for. I just realized that if someone was going to represent Queen in this capacity, I should at least try-out since Queen's music and Brian are so near and dear to my heart.

Gresh: I just Google'd "guitar auditions" and I stumbled across it and by the time I realized it, the deadline was just three days away [*laughs*]. I figured it was already a "win" since I had submitted a video of "Killer Queen" the night of the deadline.

"Tristan and Brian complement each other so well," says Queen guitarist Brian May about Queen Extravaganza guitarists Brian Gresh (left) and Tristan Avakian (right). Gresh's main axe is his "homemade" '86 Ibanez Roadster, while Avakian goes purist with his Brian May Guitars Antique Cherry Red Specials—one even has the Fryer/Brian May Treble Booster on the strap. Photo by Jasen Petersen

As the process and voting was unfolding, what were you thinking?

Gresh: Three days after my upload I found out that I made the second round and I had to do another video—this time I was told to do Queen's "Keep Yourself Alive." I figured I'd go all out and use all my *moves*.

Avakian: Since I was initially apprehensive about this whole process, I was relieved once I saw quality players in the band that could potentially be honoring Queen. I actually started to worry in the second round when players like Steve Zukowsky, who's in the Queen tribute band Sheer Heart Attack, and Richie Castellano, who's rhythm guitarist and keyboardist in Blue Öyster Cult, appeared. And, of course, young Brian Gresh scared the crap out of me, too [*laughs*].

Brian, describe your go-to "moves" that you had in your back pocket?

Gresh: [*Laughs*] I did a backflip during the solo part of "Keep Yourself Alive." And then during the live audition of "One Vision," I did another flip, but I think I unplugged Roy's [another guitar finalist] guitar chord when I landed so I'm still sorry about that.

Have you broken any bones or guitars doing this?

Gresh: I haven't broken any bones, but I did break a $50-eBay guitar when I didn't get enough height and it was either my face or the guitar. Thankfully the guitar sacrificed itself and took the fall [*laughs*].

How did you ever think to do backflips while playing guitar?

Gresh: I remember having a dream when I was in fifth grade of a band that had their guitarists doing flips during solos. The biggest part of learning to do the flip with a guitar was not having any arm lift because you rely a lot on the momentum of your arms going up to get the necessary height for the flip, so I had to build up my leg strength. The first live performance that I did it was my high school's jazz band concert my senior year—I think I really shocked a lot of people doing it there [*laughs*].

Tristan, did *We Will Rock You* prepare you for this gig or was it almost a handicap because you were so close to the material?

Avakian: Honestly, it was a liability. To fit within the format of the musical, music was chopped up, played in different keys, even within the same songs because two different characters were singing it—a villain and a hero—and everything is mixed together in a way that benefitted the show and onstage performance. Rarely did we play the material in standard, true-to-form package, which will happen throughout the Queen Extravaganza where we'll reference their early live days as a feral four-piece band.

How did the final auditions in L.A. work out?

Gresh: Everyone was nice and didn't have any egos. I was the only guy that hadn't ever gone through an audition, but everyone was very professional. We actually had to work together throughout the finals because they grouped us into pairs of guitarists with the other contestants making different band combinations. Then, we had 90 minutes to come together and figure out who would take what leads and rhythms, who would stay back during certain parts, and when we would synchronize our parts for a harmony effect. We had to be a team to survive.

Avakian: I wish I knew [*laughs*]… I had done a show with Night Ranger in Louisiana the night before and the only

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BRIAN MAY'S ADVICE:

Work for the Greater Song

Queen guitarist Brian May took a hands-on approach to mentoring Brian Gresh and Taylor Avakian as the two pickers prepared for the Queen Extravaganza. We asked May what it was like to see his music through new eyes (and fingers).

Photo by Jamie Cooper

What sort of input did you have on the selection process for the Queen Extravaganza?

This is Roger's baby, but because he's hiring guitarists I can't stray too far. [*Laughs.*] I went through some of the videos and made notes on the players that I really liked and felt could do the music, tour, and overall production at a high level.

Queen Extravaganza is a much more stripped-down, band-only endeavor compared to *We Will Rock You*. Is this what you thought it would be?

We Will Rock You tells a different story and is part of a bigger overall production of music, dance, and visual stimulation. I think with Queen Extravaganza the music is the central focus since the songs will be played in their entirety.

In the very beginning, I thought it would be very interesting for it to be big and orchestral—it would still rock with a traditional band, but with a full-scale orchestra bringing all of our compositions to life … [*laughs*] much more extravagant if you will, but Roger became very infused with the idea that the band would be like us in the early days.

What was it like for you when you saw Tristan and Brian playing the riffs and songs that you spent countless hours creating and recording with Queen?

I just enjoyed it thoroughly. In the beginning of *We Will Rock You*, I tended to worry quite a bit about how the songs and guitar parts were not done right. I actually would get quite nitpicky about the details and how every note needed to sound. I've learned over the past 10 years that it's good to have a light touch when dealing with art and music.

Did you give them any specific advice beyond that when they perform Queen's music and your riffs?

What I tried to drive home to Tristan and Brian is that I wanted them to bring themselves to it—I didn't want them to be carbon copies of me or my playing. Another thing I was keen on was encouraging and making sure they felt comfortable in letting the band organically evolve as a whole throughout the rehearsal process and eventually on tour.

If and when I'm giving advice to guitarists in the situation of Tristan or Brian, one of the things I always say is if you're in any way doubting what to play, listen to the vocals because everything revolves around the voices and harmonies. Even when I was coming up with these songs and writing these licks I would always ask myself, "Does this make sense? Does this work for the greater song?" In those periods, I learned restraint—a great tool for guitarists and writers.

Were you able to talk with the guys about gear or give them any suggestions on their setup for the tour?

[*Laughs.*] For me, it's simple—if it sounds good and sounds right then it is right. Both those guys have their sound put together already, so it's not something I worry about terribly, but we did all play through new handwired AC30 amps for the rehearsals and the *American Idol* performance, which was a first for me. No matter what, you get something special out of any Vox—especially an AC30. They're just made different—even to this day—from most any other amp as a class A, valve amp that's hi-fi sounding. With the negative feedback taken off that it creates a real rich, smoothness that edges its way into overdriven tones or distortion.

What are you goals and expectations that the Queen Extravaganza does for you, the music, and the band?

I would like to see it become a thing of itself—maybe like my orchestral idea years ago. For me, the most exciting part is seeing what these fine musicians and singers will do with our music and compositions because it's inevitable that they'll put their own stamp and thumbprint on it. I hope they absorb and take enough of our legacy—if there is such a thing as a legacy—and do their own thing with it and form their own identity that's new, exciting, and that has to be seen and heard.

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flight that would get me out of Louisiana and to L.A. in time for the auditions was going through the East Coast first. I was in a bleary-eyed, Keith Richards haze without the substance abuse by the time I went to the live auditions.

What about playing in front of Brian and Roger?

Gresh: At one point, Brian, Roger and Spike Edney were all standing at the edge of the stage watching and listening to us rehearse "Lazing on a Sunday Afternoon." It was a song we didn't even know that we'd rehearse in front of the band, but the keyboard player hit the opening chords and we just went with it. When the song got to the guitar solo outro, I played that and I was shocked when I saw Brian May's eyes and mouth open in enjoyment and excitement. That rehearsal was one of the greatest moments in my life [*laughs*].

Avakian: I've played in front of the guys before, so this time it wasn't so terrifying. When I tried out for *We Will Rock You* I was nervous, so to center myself I took some Lego men and set them in front of me. Then I gave each of them a name—Roger, Brian, John, and Freddie … I think I even gave Freddie a little crown and cape. I did it as a joke—as a placeholder for the real thing so I could see the humor in the situation and not tense up when it came time for the auditions. It helped me laugh at my fear and harness it.

What was your time like with Brian May?

Gresh: It was like an out-of-body experience meeting Mr. May. [*Laughs.*] He's so humble, soft-spoken, and such a sweet man to be around. It was a trip to have Brian May check out my pedalboard when I've always been dissecting his signal chain.

Guitarist Brian Gresh had never been on a national tour before joining the Queen Extravaganza, but he didn't have any trouble adding his own twist: He incorporated his talent for doing backflips mid-solo—guitar in hands. Photo by Jasen Petersen

And then he was really checking out our Vox AC30s and he made sure the Fryer/Brian May Treble Boosters were up to snuff, too. We also talked about his unusual phrasing and harmonies on the guitar and how the clarinet heavily influenced him when composing some of his guitar parts for Queen like in "Good Company."

Avakian: The invaluable lesson I've gotten from my time with Brian at *We Will Rock You* and again here with Queen Extravaganza is when you're standing next to him and see him play it's like a live feed coming out of his heart and soul. It's astonishing. Any time Brian is there in person, it's a shot in the arm. His aura and personality just lights up the room and makes everyone push that much harder.

What has been the toughest song to learn?

Gresh: The hardest song so far was probably "Somebody to Love" because in addition to nailing all Brian's little riffs, I also had to do all the crazy backup vocals throughout the song.

Avakian: "Stone Cold Crazy" is damn tricky because it's quite quick. The main riff is a mover—I've yet to nail down the picking 100 percent so I'm correctly alternate picking and doing pull-offs in the right spots. There's a string jump in between the end of the riff and when it starts over again so you really have to nail down the exact up-and-down picking motions to be in the best position to catch the riff again. When the riff is done right it's tight and explosive.

What is your favorite Queen song and Brian May solo?

Gresh: "Death on Two Legs" is probably one of my all-time favorite songs, and as a guitarist, "Lazing on a Sunday Afternoon" and "Killer Queen" are definitely stand-out Brian May solos for me. I really like "Killer Queen" because of its feel—it starts on that C minor and then the vocals come in with the awesome melodies and the guitar comes in on the perfect moments and accentuates everything. The solo is just so melodic and I love when the three harmonized guitars are talking back and forth.

Avakian: That's easy—"The Prophet's Song." It's visionary. Beyond the musical genius Brian put together and Freddie's magnificent performance, Brian's lyrics are still so contemporary and thought provoking. His phrasing, vibrato, and crisp note articulation is unparalleled in that song.

Let's talk gear. What type of gear were you using during the video submissions and then during the live final auditions?

Avakian: I used my Tom Anderson Classic S-style guitar for the submission videos. This will horrify the purists—I was using Guitar Rig 3 for those videos in the preset called Brian's Vision. I was using all the wrong things—a Strat with heavy strings and high action and plugging into a computer. [*Laughs.*] For the live audition I used a Vox AC30 and one of the Fryer/Brian May Treble Booster pedals. I used some tricks that can get you in Brian's tonal neighborhood—like playing mainly in the bridge-middle

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position. In a traditional Strat setup, the pickups aren't wired in series, but you just gain-it-up somewhere and you'll get that jangly bite like Brian.

Gresh: I was using my home-made parts guitar that is my interpretation of a 1986 Ibanez Roadstar II. The only thing original on the guitar is the Ibanez body—I got the neck from Warmoth, DiMarzio pickups from eBay, and everything else is stuff I've hand-picked and pieced together. I customized the wiring so the guitar only has a volume knob and kill switch.

From there the signal went into my pedalboard, which has a Boss OS-2 for the heavier, overdriven tones, and then for songs like "Keep Yourself Alive" I used a MXR EVH Phase and a DigiTech Harmony Man for the harmonized and layered May riffs. I used my kit-built 100-watt CeriaTone 1969 Marshall Plexi, but everything it came with has been replaced except some of the resistors. The amp has my own custom handmade attenuator—it really helps me heat the amp up and get that early VH tone much in the same way Eddie did with the light dimmer Variac variable attenuator.

Have you made any May-approved gear acquisitions since making the band?

Gresh: I'll be sticking with my personal guitars, but the show is providing us some really great-sounding Vox AC30 handwired amps. I'm really happy with using my own pedalboard with a MXR EVH Phase 90, Boss RV-5 Reverb, DOD FX40B EQ, DigiTech Harmony Man, Voodoo Lab Pedal Power 2 Plus, Dunlop 535Q Cry Baby wah, and Boss TU-2 Tuner.

Avakian: I actually have two Brian May Guitars Antique Cherry Red Specials—one of which will have the Fryer/Brian May Treble Booster on the strap in the same way Brian does it. I tried using the booster in the traditional signal path, but it just sounds and reacts the best when it's the first thing in the chain. Plus, if it's good enough for Brian, it's sure as hell good enough for me. [*Laughs.*] I'm using a sixpence —the serrated edge of the coin—because it grabs the string and gives it a bit of rasp. I like using it on cleans, because the only way to get a clean sound with this rig is to turn the guitar's volume knob almost all the way down and the coin puts back the attack and sparkle the pot rolls off. For leads or fast alternate picking I'll go to a Dunlop .88 mm green Tortex pick.

What's the thing that you're most looking forward to during the entire Queen Extravaganza tour?

Gresh: I've never been on a tour bus so it'll be a thrill to see parts of the US and Canada I've never visited before. The thing I've seen and like to apply to myself is that Brian and even Tristan are so confident in their abilities—they never play anything wrong or out of place, and even if they do it still works and sounds natural. [*Laughs.*] Bottom line: I just want to walk out of this a more, well-rounded guitarist with real-world experiences.

Avakian: I want to emerge a better musician and artist. It'll be a cleansing of sorts because this music is very nourishing to hear and play. I'm really itching to sing my backup parts because this material has so many great, harmonious parts. My voice is a muscle and I'll be working it out every day on the tour so when I finish I'll be able to really dig into my own recording projects and have a better overall voice thanks to this opportunity.

BRIAN GRESH'S GEAR

Guitars
'80s Ibanez Roadster body with Warmoth neck, Fender bridge, DiMarzio pickups
EVH Wolfgang
Martin OMCX1KE

Amps
Handwired Vox AC30 (mic'd with SM57 on front and Sennheiser 421 in back of cab)

Effects
MXR EVH Phase 90
Boss RV-5 Reverb
DOD FX40B EQ
DigiTech Harmony Man
Voodoo Lab Pedal Power 2 Plus
Dunlop 535Q Cry Baby wah
Boss TU-2 Tuner

Strings and Picks
D'Addario Nickel Super Light 9–42 (strings)
Dunlop Jazz III Round 1.10mm (picks)

TRISTAN AVAKIAN'S GEAR

Guitars
Brian May Guitars Antique Cherry Red Special with wireless transmitter going into Fryer/Brian May Touring Edition Treble Booster taped to strap
Takamine 12-string acoustic-electric
Two Takamine G Series acoustic-electric models

Amps
Handwired Vox AC30 (mic'd with SM57 on front and Sennheiser 421 in back of cab)

Effects
Boss TU-2 Tuner
Xotic RC Booster
TC Electronic Vortex Flanger
Tech 21 Boost Chorus

Strings and Picks
DR Strings Tite-Fit 9.5–44 (electric)
DR Strings Phosphor Bronze 11–50 (acoustic)
DR Strings Phosphor Bronze 10–48; 10–28 (12-string)
Herco Nylon Medium (picks/acoustic)
Dunlop Tortex .88 mm (picks/electric)
Sixpence (for picking/electric)

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THE PLAYERS

Since graduating from Musician's Institute in 2004, Justin Derrico has toured with artists from the Calling to Robin Thicke, and has performed with Tina Turner and Beyoncé at the Grammys. He is currently touring with Pink and playing in the house band for NBC's The Voice.

Steve Trovato has authored over 30 guitar instructional titles covering all facets, levels, and styles. He maintains a full-time position in the Studio Jazz Department at the University of Southern California. His latest album, Country Jazzmaster, *is saturated with the influences and appreciation of country guitar and Western swing's essential greats: Jimmy Bryant, Danny Gatton, Albert Lee, and Hank Garland.*

Taylor Locke is a guitarist, singer, songwriter, producer, and engineer. He's currently wrapping up a third LP with his group Taylor Locke & the Roughs, and is a founding member of L.A. power-pop band Rooney. He operates a studio called the Velveteen Laboratory in Los Feliz.

Dick Denny's name may not have the same resonance with guitarists as Leo Fender's, but for a generation of British guitarists and scores of amplifier builders who came in Denny's wake, his work is no less ingenious or important. Denny, you see, was the brains behind the Vox AC15. With his simple stew of EL84 power tubes, 15 watts of power, and a 12" speaker, he created one of the greatest, most timeless vehicles for electric-guitar expression. Within a few years, Denny's AC30 would supplant the AC15's first masterstroke as the standard bearer of British amplification—effectively becoming for British Invasion bands what the Spitfire was to the Royal Air Force.

But even if more powerful amps ultimately got the headlines, the AC15 remained an article of tone-generating perfection. Its combination of glinting clean tones and delicious harmonic overdrive remained invaluable in the studio and on small stages. As the legend of the forgotten Vox grew in the decades to follow, small boutique amp builders looked to the AC15 as inspiration and a model of design elegance.

The nine amps given a workout here are, in one way or another, children of Dick Denny's vision. They may vary a bit in terms of power and features, but each looks to the magical formula of EL84 power tubes and a ballpark of 15 watts. For our roundup, we assembled three L.A. studio and touring pros and let them have their way with each of these lovely little machines. In the process, we were all reminded just how near-perfect Dick Denny's tone recipe was from the beginning and what a wonderful time it is to be in the market for one of his masterpiece's offspring.

65AMPS LONDON

Though 65 Amps hasn't been around as long as some of the brands in this roundup, since founding the company in 2002 Dan Boul has built an enviable roster of guitarists who play his gear on the stage and in the studio—players such as Keith Urban, Peter Frampton, and Rich Robinson. The London and its formidable combination of EL84-driven Vox- and Marshall-like tones is one of the company's most popular rigs.

SPECS

FORMAT: 2x12 combo
WATTS: 18
PREAMP TUBES: Two 12AX7s, one EF86
RECTIFIER: EZ81
TREM CHANNEL: Hi/lo inputs with speed, intensity, tone, and volume controls
COLOUR CHANNEL: Hi/lo inputs with color, tone, bump, and volume controls
MASTER CONTROLS: Cut control
SPEAKERS: Celestion Alnico Blue and Celestion G12H
PRICE: $3,295 (Also available as a head for $2,695 street, or as a 1x12 combo for $3,195 street.)
65amps.com

LOCKE: This is a great amplifier. I could do a gig with no pedalboard with this amp. It's got two channels—the first sounds like an old 18-watt Marshall to me, the second channel sounds more Vox-y. Both channels are very touch sensitive, very responsive to pickup and volume-knob changes. The tremolo is *very* good, it's deep but not mushy. The footswitch has a great layout—if you're playing in the first channel, it controls the booster. So instead of bringing a boost or an overdrive pedal with you to a gig, you can use this to get the gain you need for lead playing.

It would be nice if they [made] a footswitch where you can go between both channels *and* the booster *and* the tremolo.

The amp's tone is really robust, really rich, with really good note separation and clarity. You could go from playing regular rock things to more complex chords—major 7ths and [other] things—and it never gets mushy. It's clear, it's [got] good volume … it's loud, but it wasn't ever painful or harsh.

You could do anything with an amp like this—play whatever guitar you want, dial it in and record or play a gig for anything from rock to pop to blues. The 2x12 setup is great—a Celestion Blue and a 30-watt Greenback, which is great for recording because you mic each side and you record them individually.

One thing that's frustrating to see is when an amp is stacked with the whole kitchen sink in there—with reverb and tremolo and boosters and switches—but it only has maybe one or two really good, useful tones in it. But everything here is really useful—these are things you'll actually use in the studio or live.

DERRICO: I really dig this amp. I like the Colour channel and how you can brighten it up and make it thin and sort of brittle or warm it up. The second channel sounds very Vox-like—good for Brit rock 'n' roll and old-school rock 'n' roll.

The tremolo's killer, though it does take a second to appear when you switch it on. In a vibe-y sort of song, that'd be cool, but if I want to change scenes in a song really quickly, I want to turn the tremolo on and have it be right there. Other than that, I really dig the way it looks—the retro, old-school grille is sexy. I think the chicks are gonna dig it.

TROVATO: I think this is an outstanding amplifier. And it's got all the ingredients to sound great in several different styles. I'd set it clean and then add gain stages with external pedals, but it can do a great distortion tone on its own. There's a really Vox-y channel and the other is really Marshall-like, for lack of better words. It's heavy—*hoo!* So be prepared for that.

It has a great tremolo, and I really like that when you use the footswitch for the tremolo the effect comes in gradually, so it's not startling. It's also a very defined tremolo—it has a very wide spectrum of intensity.

The other thing I really like is that everything is easily visible onstage. When you walk back to the amplifier and look at the controls, it's easy to read. Once you get used to the controls, there are a lot of options, so you'll have to take some time to figure out what everything does. But, that said, if you just go turn it on, it sounds really good right off the bat.

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BUDDA VERBMASTER

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Budda's Verbmaster first appeared in the '90s, and this latest incarnation stays faithful to the design that first made it popular among early boutique amp aficionados. In general, the Verbmaster has a heavier voice than a lot of smaller EL84 amps, and it's a great tool for rowdy rock 'n' roll.

SPECS

FORMAT: 1x12 combo
WATTS: 18
PREAMP TUBES: Three 12AX7s, one 12AT7
RECTIFIER: 5U4
CONTROLS: Hi/normal inputs with bass, treble, volume, and reverb knobs and sand-off-surf reverb selector
ADDITIONAL FEATURES: Effects loop, two speaker outputs with impedance selector, slave output with level control, and footswitch input
SPEAKER: Budda 12
PRICE: $1,799 street
budda.com

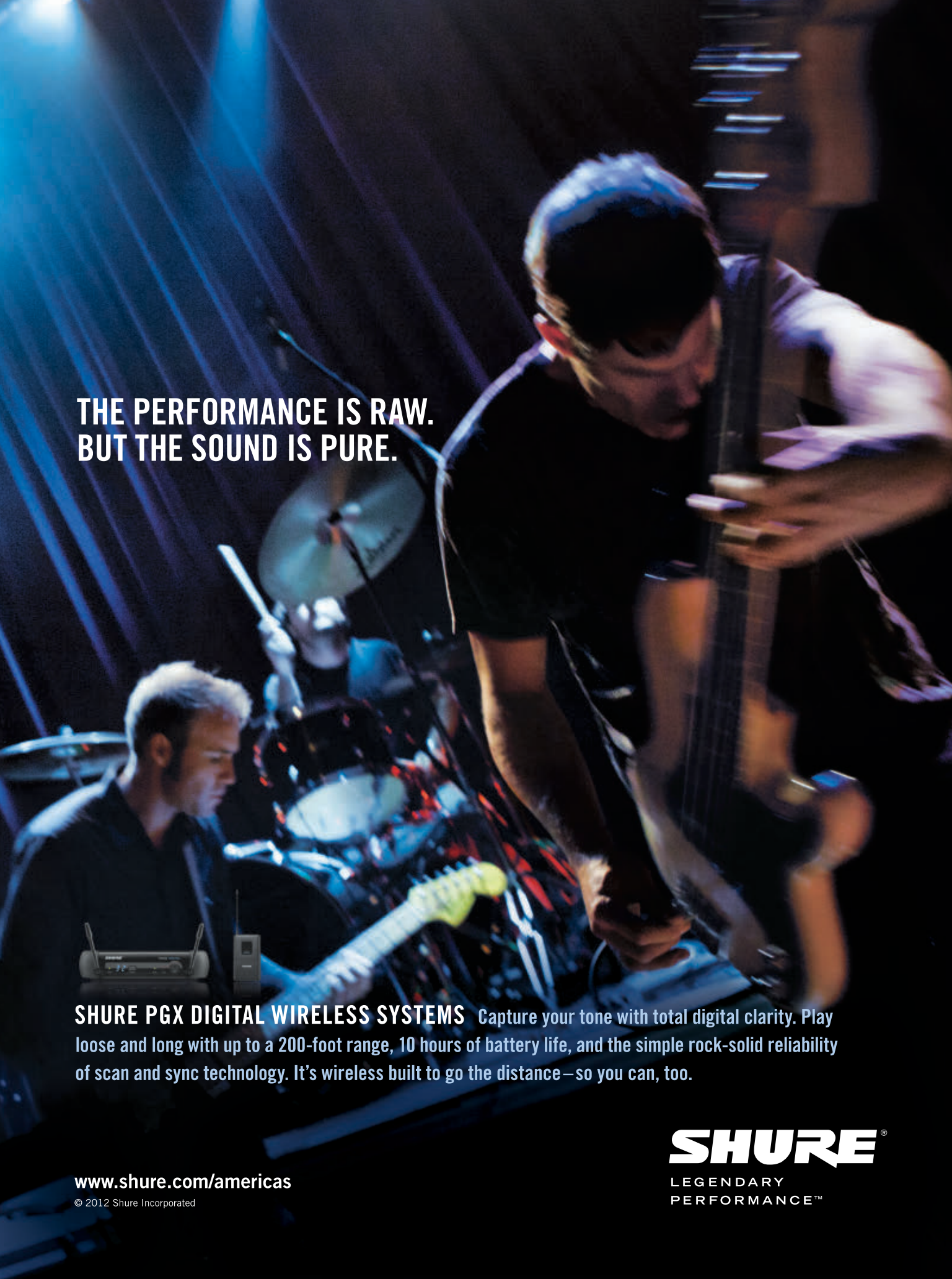
LOCKE: This is a good, crunchy, high-gain amp if you play humbuckers or play a lot of power chords or leads. The clean channel can sound a bit dull at times. Even with the treble way up and the bass way down, it seems a bit dark and woofy and doesn't have as much of that chimey, bell-like tone that a lot of EL84 players look for. But it has more bottom end than I would ever want.

The footswitch changes between the sand and surf reverb settings, but there's no light to indicate which is which—and both modes sound a little similar. A footswitch to go between normal and high-gain channels would've been useful.

DERRICO: I like the milkiness of the Budda for lead stuff on the high-gain channel—that's really cool. Rhythm sounds can get a little floppy on the low end. That's good for some things—like Hendrix-y sorts of sounds. The bass-heaviness is nice on the lower-gain channel for rhythm stuff, too. Channel switching would be nice when you want more gain for shredding, because on the lower-gain channel, there's not quite as much as you want.

TROVATO: The first thing I like about this amplifier is that the top is recessed a little bit so that when I'm onstage looking down, I can lean down and see what the settings on the knobs are clearly. Both reverbs sound good, but they can be subtle, so it's harder to get over the top of a band in a live situation. It sounds like a nice Fender spring reverb, though.

The amp has that Vox top end, but the low end is nice and tight. It's obviously a smaller sound than a 4x12 cabinet, but you still get that big, tight bottom end. So you can play full chords with it, using open strings, low strings, and it still sounds good.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CARR ARTEMUS

Carr's Artemus is unique among our roundup contestants in that it's driven by four EL84s and can switch between 15- and 30-watt modes. For the purposes of our test, we confined our impressions to the 15-watt setting. Like so many of the North Carolina company's wares, the Artemus proved versatile and full of character.

LOCKE: I like the profile of the cabinet—it's shallower and a little wider. The amp has an interesting layout, too. I started with the mid and edge switches both disengaged and went for a medium-gain sound where the amp sounded tight and full. It's a bright amp, and the edge switch made it a little bit too bright for my tastes. The mid switch is very potent—it adds a lot of midrange, gain, and sustain and compression characteristics, which are really useful. It's less necessary to have a boost pedal or an overdrive pedal with this amp.

With the neck pickup on my SG, and with its tone knob rolled all the way down, the Carr doesn't get too bassy or flubby in the low end. It seems like you could really cover a lot of territory with the Carr—though I wish the mid switch was available as a footswitch, because then you really wouldn't need *any* pedals with this amp.

DERRICO: This amp is really cool. It's got a nice snarl and the mid boost is really nice—it just gives the amp this warmth that was missing when I first plugged it in, which was really nice. The edge switch warmed things up, too. It seems like the amp got warmer every time we flipped a switch. It's also got a nice saturation sound and the breakup is awesome.

TROVATO: The first thing I noticed when I first turned this amplifier on was how bright, sparkly, and lively it sounds—it jumped right out at me. It's also very reasonably weighted, so it won't break your back when you're lugging it out to the car.

The edge mode is cool. I would use edge mode and the mid switch a lot, because they fatten up an otherwise smaller-sounding amp when you use it with single-coils—they'll really bring a Telecaster to life. I really love it when an amp makes me want to play more, and this one really does.

Although the control knobs are recessed at the back of the amp, it's still easy to lean over the stage and look at your settings, because the name of each knob is oriented so you're not reading them backward.

I really wish that the amp had reverb—I like reverb in a small amp, because it's one less thing that I have to carry. But I also really love that this amp plays well with pedals, too. With an overdrive, it really came to life and made it even bigger sounding.

CLICKHere...
to see a demo of the amp at premierguitar.com/aug2012

SPECS

FORMAT: 1x12 combo
WATTS: 15–30
PREAMP TUBES: Two 12AX7s
RECTIFIER: 5AR4/GZ34
CONTROLS: Volume, bass, and treble knobs with edge, mid, and 15/30 wattage switches
SPEAKER: Eminence Red White & Blues
PRICE: $2,250 street (Also available as a 2x12 combo for $2,390 street, a 2x10 combo for $2,390 street, as a 1x15 combo for $2,390 street, or as a head for $2,150 street.)
carramps.com

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DR. Z M12

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to see a demo of the amp at premierguitar.com/aug2012

Dr. Z's associations with high-profile players and knack for simple, sweet-sounding circuits keeps the company near the top of many boutique-amp nuts' wish lists. The cathode-biased M12 is the very picture of Dr. Z design economy, and makes a lot of noise for just 12 watts.

SPECS

FORMAT: 1x12 combo
WATTS: 12 (cathode biased)
PREAMP TUBES: One EF86, one 12AX7
RECTIFIER: 5Y3
CONTROLS: Volume, bass, and treble knobs with a hi/lo switch
SPEAKER: Celestion Alnico Blue
PRICE: $1,738 street (Also available as a head for $1,249 street, as a 1x10 combo for $1,399 street, and as a 2x10 combo for $1,499 street.)
drzamps.com

LOCKE: For only 12 watts, this amp has a surprising amount of headroom. With a Stratocaster, I can stay totally clean and there's not really a bad setting on it. I preferred the hi input, and all five positions of the Strat really spoke when I cranked the volume. With P-90s, it sounds really smooth and compressed in a way that you want from an EL84 amp, and it has great note separation for more complex chords.

I like the simplistic layout. And what it might lack in features it makes make up for in spades with tone. The simple EQ controls—bass, treble, and volume—it's all you need with an amp like this. You use different guitars, different pedals, and explore different amounts of gain on the volume knob and you can do a lot with a really simple, good-sounding, well-made amp like this. Really well done.

DERRICO: The Dr. Z is badass. I just cranked it all the way up and actually didn't really even touch the bass and treble. I love the fact that it only has three knobs, it's killer. Brad Paisley uses these [Dr. Z amps] and gets great sounds out of them, but this amp right here—the way it's set—would be great for rock. It's really milky, but it sounds like it will cut through a mix really nicely, too, which is always a big thing. Nice mids and highs—boom!

TROVATO: The first thing I noticed was a robustness and a sparkle and a tightness to this amp. It's got plenty of volume, too. It has such a natural, transparent sound that I can hear the delicate nuances and subtleties of the instrument and each pickup. This amp brings out the best in a guitar.

It doesn't have any reverb, which would be a great addition. The other thing is that when I'm looking at this amplifier from a seated position I can't even see a knob. I wouldn't even know this thing had any knobs or controls on it. I have to go way down in front to see what these things are and what they do. So, of course, when you're onstage you have to bend down or reach under there and hope you get the right knob. I like when the top is recessed a little so you can look down and see where you're going. The best thing is that I don't get option anxiety with this amplifier—there are only three knobs: volume and the tone controls. Simple, to the point, and great sounding.

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FARGEN AC DUO-TONE

CLICKHere...
to see a demo of the amp at premierguitar.com/aug2012

Ben Fargen's amps have always had a very British visual bent, so it's no surprise that the AC Duo Tone pops up in our Anglo-favored roundup. Its combination of Marshall and Vox voices makes it one of the most versatile amps of the group.

LOCKE: There's a channel called V15 and a channel called M18. Now, I did not go to college, but I'm going to go out on a limb and guess the V15 is based on a Vox 15-watter, and I think the M18 is a Marshall-style 18-watter. The Vox channel in particular is nice. It had a nice shimmer to it, a big, robust clean tone with a little more bottom end than I would generally find on Vox-style circuits, which is nice. Up in the highest quadrant of the volume control, it has a ferocious, grinding Vox tone.

The Marshall channel is great, though I wish the two channels were a little more different—it's just a little less bright on the high end. But it's pretty great for lead work when you turn it up. This is a good, robust platform for players who want a good, semi-clean, on-the-verge of overdrive tone that they can kick into overdrive with pedals. There's a master volume on the back panel, too, if you're looking for those tones at more discreet volumes.

DERRICO: This amp is pretty awesome. It looks good, and I like how each channel has only two knobs—nice and easy. The Vox-style channel is really warm and not quite as glassy as a Vox, which I kind of dig more. The Marshall side is badass—you hit a big, open D chord in dropped-D tuning, and it's just rock 'n' roll all the way. Vibe-wise, I love the warmth, and it's very organic and responsive. The more I dig in, I can really hear my hands through this amp.

TROVATO: This amp is a monster … [even though] the controls are simple. With a small amp like this, I would typically crank the master volume—set it just on the verge of breaking up—and use any distortion or overdrive effects with an external pedal. I love both channels of this amp. The V15 side has that jangly, British sound that sounds great with a 12-string guitar. The M18 side sounds very much like Bluesbreakers-era Eric Clapton. The only drawback for me, personally, is the lack of reverb.

SPECS

FORMAT: Head
WATTS: 15
PREAMP TUBES: Two 12AX7s
RECTIFIER: 6CA4/EZ81
M18 CHANNEL CONTROLS: Single input with volume and tone knobs
V15 CHANNEL CONTROLS: Single input with volume and tone knobs
PRICE: $1,949 street (Also available with a 1x12 cab for $699 street or a 2x12 cab for $899 street.)
fargenamps.com

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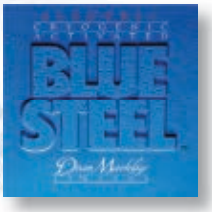

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GOODSELL
SUPER 17 BLACK LINE

Richard Goodsell knows how to build great low- to medium-wattage amps, and though he's made the most waves building unique interpretations of unusual circuits by Watkins, Valco, Supro, and Univox, the Super 17 trades in more familiar vintage-AC15-like tones.

SPECS

FORMAT: 1x12 combo
WATTS: 17
PREAMP TUBES: Three 12AX7s
RECTIFIER: GZ34
CONTROLS: Volume, tone, gain, reverb, depth, and speed knobs
SPEAKER: RG-65
PRICE: $1,499 street
superseventeen.com

LOCKE: This sounds a lot like a real vintage AC15. It's very tight sounding. One of the things that you look for in an EL84 amp is the compression—the way that, when you hit it, it sort of attacks and then clamps onto what you play and blooms like a compressor in the studio would—and this amp is very good at that. With my hollowbody Gibson 330, there's a lot of contrast between pickups without getting too bright or muddy on either.

The tremolo is a nice footswitchable feature. I only had the depth about halfway up, and it was really deep—there's quite a sweep on the depth and speed knobs. I don't use reverb amps very often—and you don't often see reverb on EL84 amps—but it's cool to have and you can get a cool surf sound out of it. It also packs a lot of punch for its physical size. It's a very efficient little amp—a very powerful 17 watts and a good buy.

DERRICO: I think what I like most about the Goodsell is the tremolo, it's really organic sounding. I like how deep it is. Even though I didn't have the depth all the way up, it was nice. It reminded me of something I could use if I were doing a Norah Jones song. The reverb is really nice and natural, as well. It's a tiny amp, and it's really loud for how small and light it is—and it looks killer, too.

TROVATO: This small amp has a gain stage and a volume that I tend to push to the maximum. And the gain has to go way up before things really distort, but it sounds really good. I always like to set an amp up for the best clean sound and add any kind of gain or distortion using a pedal, so this amp would work well.

When I turn off the tremolo, I can hear this subtle pulsing through a hum on the amplifier. I think this amp is a little light or small sounding, and might not be quite loud enough or powerful enough to get over a drummer in a live band situation. I think it's perfect for home recording, though.

CLICKHere...
to see a demo of the amp at premierguitar.com/aug2012

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MATCHLESS LIGHTNING 15 REVERB

The Matchless name stands as one of the most esteemed godfathers of the boutique amp scene. The company first made waves with its top-shelf, Vox AC30-inspired designs, but its Lightning model has long been legendary for its ace AC15-inspired tones, too.

LOCKE: I liked this amp a lot because it allowed the guitar, the pickups and controls to speak. I didn't have to re-EQ the amp for different pickup settings. It sounds good clean, has a very smooth, linear transition into overdriven tones and plenty of gain for lead. I only turned to gain up to 12 o'clock and it had plenty of juice. If I had a solidbody guitar and cranked the gain all the way up it would have enough gain for metal. The reverb was really good—nice and thick.

DERRICO: What I like about this amp is the dirty sound and the chime and that it's nice and girthy. It would be cool for country lead stuff. I like the reverb, though the dial is pretty touchy and you can get into reverb overload. But it's actually really nice reverb.

I like the clean tones, but I don't know if I could crank it too much and still get that clean sound. I do like the glassiness of this amp. Especially when I crank the master—I always like to crank the master—it has a nice, warm sound with nice highs, lows and mids. It would sit nicely in a band mix.

TROVATO: You can't go wrong with this amplifier as far as projection goes. It's bright, robust, and Vox-style jangly. The EL84s give you that jangly top end without the flubby bottom end you tend to get with these low-wattage amps. The bottom end is really tight. It has a great-sounding reverb—like a cross between an old Fender spring reverb and a digital reverb. So it's got that digital clarity plus that surfy reverb and you can dial between the two of them. The amp is a little heavy, and the names for the tone controls are a little hard to see quickly, which is important when you're changing things on the fly on a dark stage.

SPECS

FORMAT: 1x12 combo with reverb
WATTS: 15
PREAMP TUBES: Three 12AX7s
RECTIFIER: 5AR4
CONTROLS: Volume, bass, treble, master volume, and reverb knobs
SPEAKER: Matchless-modified Celestion G12H
PRICE: $2,384 street (Also available as a head for $2,013 street, as a 1x12 combo for $2,119 street, as a 2x12 combo for $2,331 street, and as a 2x12 combo with reverb for $2,599 street.)
matchlessamplifiers.com

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TOP HAT CLUB ROYALE

CLICKHere...
to see a demo of the amp at premierguitar.com/aug2012

For Top Hat, Vox-style amps are old hat—the company's takes on British chime have been favorites of tone connoisseurs for years. When it comes to AC15-style circuits, the Club Royale's interpretation serves up a range of tones from very traditional jangle to heavy gain.

SPECS

FORMAT: 1x12 combo
WATTS: 20
PREAMP TUBES: Three 12AX7s
RECTIFIER: EZ81
CONTROLS: Dual inputs with master, cut, bass, mid, treble, and volume knobs and a fat-off-bright voicing switch
SPEAKER: Celestion G12H
PRICE: $1899 street (Also available as a 2x12 combo for $2,099 street.)
tophatamps.com

LOCKE: I'm really impressed. There's a versatility to this amp—the amount of gain on tap is great, and the way the bass, mid, treble, and cut controls interact with each other is very useful. There's not a bad setting on the amp, and it was easy to switch from my SG to a Stratocaster. The boost switch—and the amount of gain you get with it—means you don't really need to put a pedal in front of the amp. I was able to get plenty of sustain for lead parts.

One thing you need to be careful about with smaller 1x12 amps like this is the bottom end getting loose and falling apart when you play with more gain. But this amps is very tight, and each of the controls does what it should so you can really carve out a variety of different tones. I can't say enough about the build quality, too. You could do almost anything with this amp—you could make a whole record with a couple different guitars and this amp.

DERRICO: This amp is killer. It's got a nice bark and it's really chimey, with a nice amount of gain, too. For a combo, it sounds big. I plugged in and it took, literally, a second to dial it up. My philosophy is, if it takes you more than two minutes to dial in a good sound, then it's the wrong amp.

TROVATO: My first impression of this amplifier is that it's a Cadillac—it looks *classy*. And it's got plenty of wattage for a small gig, which is a feature that I really appreciate. I set the amp up with master volume up all the way, then turned the gain up so that it was almost breaking up. When I set it there and adjusted the rest of the tone controls, it sounded just great. It's big, it's robust, and when I started playing the distortion pedal through it, it didn't get muddy. However, I don't really like to carry any extra gear to a small gig, and this amp does not have reverb, so right off the bat I'm going to have to bring a pedalboard with reverb or something to get some time delay.

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VOX AC15 HAND-WIRED AC15HW1X

The Vox AC15 is the granddaddy of low-wattage EL84 amps, and as such it's the genetic blueprint for each of the amps in our roundup. This latest handwired incarnation is a sonically faithful offspring of the original that provides tones ranging from classic sparkle to rough and rowdy.

SPECS

FORMAT: 1x12 combo
WATTS: 7.5–15
PREAMP TUBES: Three 12AX7s
RECTIFIER: EZ81
NORMAL CHANNEL CONTROLS: High/low inputs with volume knob and bright switch
TOP BOOST CHANNEL CONTROLS: High/low inputs with volume, treble, and bass knobs and hot/cool switch
MASTER SECTION CONTROLS: Tone cut and volume knobs with master volume bypass switch
ADDITIONAL FEATURES: 15/7.5-watt op mode switch, included footswitch
SPEAKER: Celestion Alnico Blue
PRICE: $1,449 street (Also available as a 1x12 combo with a Celestion Greenback for $1,199 street.)
voxamps.com

LOCKE: The first thing I noticed about the amp is the fawn, early-'60s classic Vox look—I'm pleased they're bringing that back. Both channels sound a bit different, which is cool—that's what you want. At lower volumes, it has the classic Vox chime, and as you turn it up you get a grindier Vox sound. The sweep on the volume is very linear, which I like. And there wasn't an abrupt change from sparkly clean to really overdriven—you can hear all the shades of overdriven textures in between as you turn up. With a hollowbody guitar, it's easy to get feedback and it's very responsive. It sounds like a Vox AC15 should—they successfully made a faithful reissue of a classic amp.

DERRICO: It's got that real nice, glassy thing that all Voxes have. And I really love the way it looks—it's sexy as hell. The top boost has a ton of gain, which could be really cool for rock 'n' roll stuff.

TROVATO: This amp does exactly what the name on the front suggests—it's got *that* sound. It's got a 7.5-watt or 15-watt mode, and it's a *loud* 15 watts. The controls are easy to read, even if it's a guitar geek's heaven back here—it's got so many options. The first one, the normal channel, sounds just like it's supposed to sound. I was tempted to play a lot of open-position chords because it has that jangly sound with that tight low end. It doesn't sound floppy on the low end at all, which is the sound these amps made famous. The other channel is better for distortion. It doesn't sound quite as jangly as the normal channel to me. But where I would use a distortion pedal [with the normal channel] I can go into this other channel instead. You lose some of the high end, but it sounds better than using a pedal, which gets too ice-pick-in-the-forehead for me.

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Joe Robinson: The Acoustic Virtuoso Plugs In

Photo by Andy Ellis

Super-picker Joe Robinson explains why he went electric on *Let Me Introduce You,* and describes his journey from hotshot instrumentalist to singer-songwriter.

BY ANDY ELLIS

Once in a great while, a young guitarist captures the attention of music lovers early in his career and manages to sustain this interest as he matures creatively and sheds the "prodigy" label. Joe Robinson is one of these rare talents: At 21, Robinson has been building a buzz for almost 10 years, first in his native Australia, then in Europe and the UK, and now in the US.

For those who've been following Robinson's career, stories of the flattop-wielding teenager winning first place in major televised talent competitions are old hat. More relevant to *PG* readers is that fingerstyle master Tommy Emmanuel has mentored Robinson for years, often bringing him onstage for fiery duets. Though Robinson only began playing guitar a decade ago, he's already a seasoned veteran, having done thousands of shows all over the world. He developed his jaw-dropping chops by getting up at 4 a.m. every day to put in a four-hour practice session before going to school. After school, he'd grab another four hours of guitar time. Dedication? Robinson has it in spades. This nearly freakish drive allowed him to hit the road at an age when most kids are thumbing through comic books or absorbed in video games.

"When I was 12," he says, "I went on tour with an Australian country artist named Texas Rose. He lent me an electric guitar, which I didn't have at the time. It was a Yamaha SG-700 and I borrowed it for two years."

Robinson's 2009 US debut—the all-acoustic and instrumental *Time Jumpin'*—earned him immediate respect from the thumbstyle guitar community, and now he regularly performs at the annual Chet Atkins Appreciation Society convention alongside such top-tier fingerstyle players as Emmanuel, Thom Bresh, Martin Taylor, Doyle Dykes, Muriel Anderson, and Steve Wariner. And consider this: *Time Jumpin'* was produced by Frank Rogers, who, as Brad Paisley's producer, knows a hot picker when he sees one.

With *Let Me Introduce You*—Robinson's latest album, which was also produced by Rogers—the soft-spoken Aussie recasts himself as a singer-songwriter. The album features plenty of blazing guitar (both fingerstyle and flatpick), but the poppy vocals and carefully crafted production may leave some ardent fans of Robinson's solo acoustic fretwork scratching their heads.

"I'd never done a commercial-sounding electric guitar album before," he says. "So it was a huge learning experience making this CD. I got to work in some great studios with first-class musicians, producers, and engineers, and now I feel like I just graduated from college."

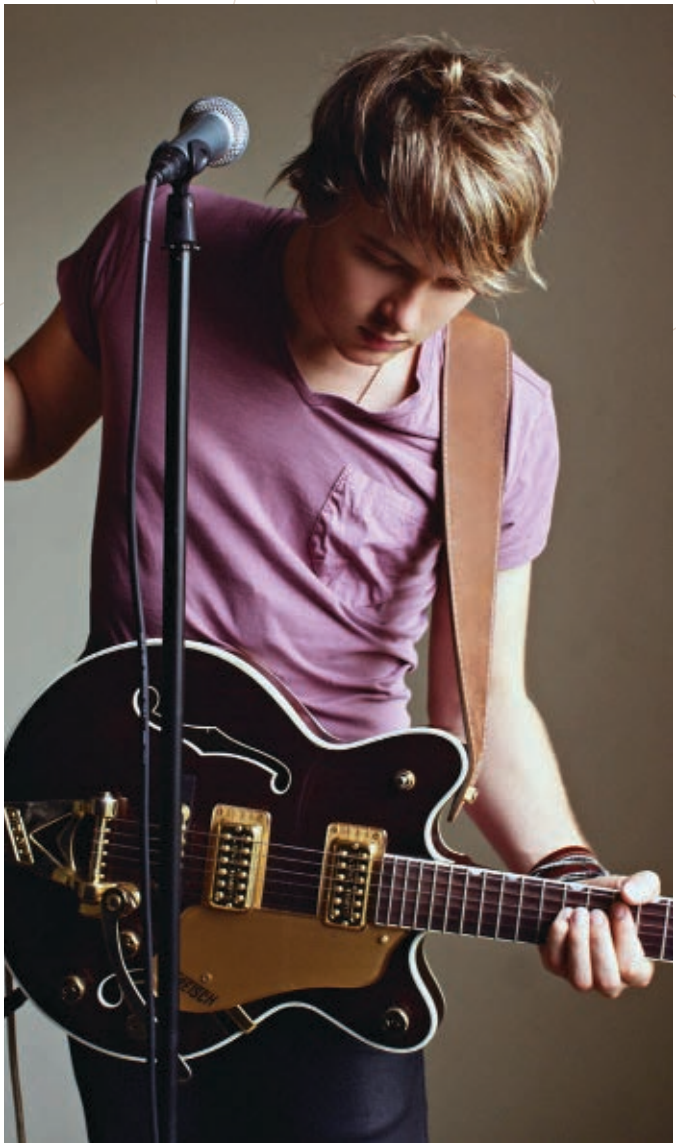
Recently we spent a rainy afternoon with Robinson at his manager's Nashville office, discussing this crash course in studio craft, as well as his creative process, favorite gear, and what he sees as the next step in his musical odyssey.

Where did you track *Let Me Introduce You* and how long did you work on it?
We started tracking in March last year and ended in October. It took a while because we did it in sections. We recorded the bass and drum tracks over a weekend in a studio called The Castle, just outside of Nashville. Then I went on tour and when I got back to Nashville, I started recording my guitar overdubs in various local studios. Frank Rogers, the producer, had to work on another project at one point, so he was out for a month. We kind of piecemealed it until everything came together.

Did you cut your rhythm guitar with the bass and drums?
We recorded as a trio to get really good drum and bass performances, but we replaced my tracks later. And before we went into the studio we had three days of rehearsals because I wanted us to feel like a band when we started recording. I wanted to avoid learning songs in the studio.

Keith Carlock on drums and Michael Rhodes on bass—what a rhythm section! How did you connect with them?
I've been a fan of Keith's drumming for years—all the stuff he has recorded with Wayne Krantz, Oz Noy, and the whole 55 Bar community in New York. He was the guy I dreamed of having play on my album, so it was really cool that he said yes when we reached out. I knew he'd played with Michael before, so we asked him to play bass and he was really excited about it. Hanging out with those guys and hearing them play my songs was like a fantasy come true.

Were you intimidated at all? These guys have played with James Taylor, Steely Dan, Sting, Vince Gill, John Mayer, Keith Urban—the list goes on and on.



Robinson's Gretsch Country Gentleman is one of his main stage guitars, but he mostly played a '60s Gibson E-335 on *Let Me Introduce You*. Photo by Ethan James Photography

I wasn't nervous about *playing* with them—that was the fun part to me—but I was nervous that my charts were wrong. I knew what I wanted on pretty much all the songs, so articulating that to Michael and Keith in a way they could understand was really important to me. Otherwise I would have walked away with something that was different from what I wanted. But it was really easy to work with such high-caliber players. You can make one little suggestion and they take it onboard so quickly and easily. I gave them charts when we first dug into the music in those rehearsals, and that's when we all got a sense of what the project would sound like.

Give us an example of the kind of direction you offered.
Well, it was really quite detailed. For instance, I knew the exact feel I wanted on the hi-hat and often I wrote out the bass lines. I handed Michael some notation at one point and he was like, really? But on "Lethal Injection," I had to. It's a part—not just chords—so I had to show him that. He liked

[Bassist Michael Rhodes] liked a lot of the lines I came up with, which was cool, though he felt he needed to de-literalize some of the parts to make it more of a feel thing and less of a mechanical performance.

a lot of the lines I came up with, which was cool, though he felt he needed to de-literalize some of the parts to make it more of a feel thing and less of a mechanical performance.

What were some of your biggest challenges making this album?
A big part of it for me was learning how to sing and play at the same time. On the acoustic songs, I wanted it to sound like a fingerstyle guitarist accompanying a singer, so I had to learn to play the guitar with a good feel and execute the parts I wanted to hear, yet also sing without thinking about the guitar playing.

I used James Taylor as a model because I love the way he plays and sings. His phrasing is so good on both the guitar and vocals—the two fit so well together. I wanted the guitar to play an integral role in the song, so I essentially took the same approach with counterpoint that I use in my solo acoustic guitar pieces and applied it to the context of singing and interacting with other musicians. My instrumental concept

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involves a constantly moving harmonic structure—a bass part going one way and a melody part moving on top of it. The challenge was to add vocals to that underlying structure.

Did you record home demos to work out your parts?
I did guitar-and-vocal demos of all the songs. I played all the songs on acoustic—even the ones I knew would be electric on the album—just to hear them in their most basic form. I demoed a lot of songs to determine which ones felt right for this album. I lived with the demos for about a month, so by the time I was at rehearsals, I had a grasp of the material. I really focused on these work tapes, trying to hear if the lyrics were solid and if they were communicating what I wanted to say.

I was nervous that I'd never really sung on a record before. And, although I've written a lot of songs, I'd never really written any for myself as an artist. So once I knew I wanted to do an album of vocal-based songs with a band, I decided I needed more experience in this area. I went through a process of cowriting songs with people on Music Row [the historical area on 16th and 17th Avenues in Nashville that's home to dozens of music publishing companies]. Five days a week for six weeks, I churned out a song each day. Each week I'd get a better handle on the songwriting process and write better stuff. It was interesting to explore that world—some of those writers are just geniuses.

What did you take away from those songwriting sessions?
One of the dangerous things about being a skilled musician is you can basically play any song and make it sound okay. Sometimes when working with other songwriters I'd play a cool guitar lick and they'd say, "I love that." And we'd write a song that was kind of neat, but what held it together as a song was the guitar lick. I've really tried not to rely on that.

Sometimes I'd show up for a Music Row session and the first thing they'd say is "what format are you in?" I'd be at a loss—I'm definitely not writing songs for country or even pop radio. I just want to write music that inspires me.

And how would you describe that music?
I love people who have a unique melodic sense—that's exciting to me. When I watch *The Voice* or *American Idol*, I see some great singers but they all sound similar. It's the same when I see blues-rock guitarists—they all play the same licks. The musicians I like are those who take their talent and technique and use them to make something interesting and original. That's why I love writing with piano players—they always have nice harmonic ideas that guitarists might not think of. I really try to incorporate piano voicings in my guitar parts.

Are all the songs on *Introduce* from this recent writing period?
I wrote most of the songs on the album a few months before going into the studio. The instrumentals are a bit older. I've had "Lethal Injection" for a year, and I wrote "Uli's Jump" when I was 17. That's the oldest song on the CD.

"Uli's Jump" reminds me of Jimmy Bryant. Did you ever get into him?
Oh yes, Jimmy Bryant is crazy amazing! You know the albums he made with [steel guitarist] Speedy West? I can play several of those songs by heart. A friend from Sydney and I used to play all the parts in harmony.

I wrote "Uli's Jump" with Pat Bergeson, a Nashville guitarist whose playing I love. I was opening a show for him in Germany and staying with a guy named Uli, and Pat and I jammed on that theme. I was basically trying to steal as many licks from Pat as I could.

What gear did you use on *Introduce* and what did you learn from these sessions about capturing great guitar tones?
I was lucky—I tracked a lot of my electric guitar overdubs at Frank's home studio, and he has a really great guitar collection. That's important because each electric guitar sits in a different sonic spot in the mix, and if you find the right guitar, it can really make all the difference.

For "Barely Hanging On," I played a Strat I've had since 2003. It was the first electric guitar I ever bought. When I was a kid, I broke the neck by cranking the truss rod too far, so I recently got the neck replaced. It has pickups wound by Mick Brierley in Adelaide, South Australia. He does great stuff—his pickups are reasonably priced and a lot of Australian guitarists use them. I have Brierley pickups in two Strats and one Tele.

We didn't use my Gretsch Country Gentleman—one of my main stage guitars—that

Joe Robinson's Gear

Guitars: Gretsch G6122-1962 Chet Atkins Country Gentleman with Tru-Arc bridge, Fender Custom Shop '60s Strat with Brierley pickups, '60s Gibson ES-335 (borrowed from producer Frank Rogers), Maton 808TE acoustic, Maton Custom Shop acoustic

Amps: Laboga Alligator 30, AER Compact 60, Dr. Z Carmen Ghia

Effects: Eventide TimeFactor, Electro-Harmonix Deluxe Memory Man, T-Rex Tremster, T-Rex Octavius, Ibanez TS808 Tube Screamer, Peterson StroboStomp2 tuner/DI, T-Rex Room-Mate, T-Rex Alberta, Voodoo Lab Sparkle Drive, Radial Tonebone, Jim Dunlop Cry Baby wah

Strings, Picks, and Accessories: Elixir 80/20 bronze .012 set with a .016 or .018 1st string, Elixir Nanoweb electric .011 set with .012 or .014 1st string (Gretsch Country Gentleman), Elixir Nanoweb electric .010 set with .012 1st string (Fender Strat and Tele), Wegen flatpicks

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When I go onstage, I feel like a boxer stepping into the ring. I try to project my playing as if I'm slapping you in the face with my guitar … It's almost like you're trying to make your solo smack into the back wall at the end of the room.

Robinson rocks his Custom Shop Strat—the first electric he ever bought—at the *Let Me Introduce You* release party at Nashville's 12th & Porter on February 22, 2012. Photo by Andy Ellis

much, as it turned out. In "Adelaide," my Gretsch is rocking out somewhere in the mix, and it appears in spots on "One Heart at a Time." But mostly I played Frank's '60s Gibson ES-335 through a Laboga Alligator 30—a Polish class A 30-watt 2x12 combo. I love it. It sounds a little like a Vox AC30, but way creamier.

How did you discover the Laboga?
There are probably only about five in the US. What happened was Tommy Emmanuel had one here in Nashville. I borrowed it once, and it changed my life. Certain amps just don't work for me with my Gretsch. I like AC30s with the Gretsch, but I don't much like blackface Fenders with that guitar. When I played the Gretsch through the Laboga, I was in heaven.

So I went out on a limb and asked Laboga to send me one. I managed to get one here, though it was quite difficult with international shipping and customs. For this album I used the Laboga with a Dr. Z Carmen Ghia 1x12 combo and they just worked together so well.

You tracked through both amps simultaneously?
Yes. And we discovered that if we turned one off we'd miss it, so the amp chain stayed pretty consistent. I also used an old vintage Tube Screamer and a T-Rex Octavius. As far as non-distortion effects like delay or reverb, I'd record dry and add them in the mix using plug-ins.

What about acoustics?
On some of the acoustic songs I used Frank's Gibson J-45. I also played an Everett, which is a small-bodied acoustic, as well as my Matons, which I strung with impossibly heavy strings and mic'd really close. We used ribbon mics on certain tracks, and on every song we used a different mic-and-guitar combination.

Define "impossibly heavy" strings.
I use 80/20 bronze Elixir .012 sets on my acoustics, but with a .016 for the 1st string. And on some tracks, like "Hurricane," for example, I couldn't get the notes to speak properly, so I put on a .013 set with an .018 for the top E string. For that song, I played my Maton, capoed at the 1st fret. My fingers were sore afterward! Since then, that guitar was broken in a flight. Maybe the airline did it or maybe the heavy strings did it in.

Do you put comparably heavy strings on your electrics too?
On the Gretsch, I usually use an .011–.049 set, but with a .012 or sometimes a .014 on top. My Strats have a .010 set, but with a .012 on top—it just feels more balanced to me. I use Elixir Nanoweb strings on my electrics.

What gear do you use onstage?
For my acoustic, it's a Maton with a stock undersaddle pickup, onboard mic, and Maton electronics. As far as electric guitars, I usually travel with a Strat and my Gretsch.

When I carry an electric guitar amp, it's the Laboga. But even when I backline my electric guitar amp, I always take an AER Compact 60 acoustic amp. I find it hard to rely on monitors for acoustic guitar—they never feel quite right. For me, the combination of the Maton's preamp and the Compact 60 sounds incredible. I also carry a Peterson StroboStomp2 tuner. It has a DI output, so if I'm sitting in with someone, I just use the pedal as my DI. That's pretty much it.

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Solo Artist

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JOHN PETRUCCI
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STEVE STEVENS
Billy Idol
Atomic Playboys

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NEAL SCHON
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I've tried every modeller on this planet and Fractal is miles ahead in every area. It's also flawlessly dependable on stage and in the studio.

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You're known for your intense live performances. How did you develop your stage chops?
When I go onstage, I feel like a boxer stepping into the ring. I try to project my playing as if I'm slapping you in the face with my guitar. [*Laughs.*] I try to have—it's hard to explain—a certain confidence, a certain attitude, a certain attack. It's almost like you're trying to make your solo smack into the back wall at the end of the room.

All the players who have affected me the most, the ones I'm most awestruck by, have that quality. Listen to Stevie Wonder play harmonica—it just hits you right between the eyes. The guitarist who sits there playing every note perfectly with his head down ... that music has never really jumped out at me. And that's not the way I've ever done it. Of course, I have a respect for people who can play a ballad—I'm terrible at playing ballads—but I try to put on a good show.

Do you remember when it first dawned on you as a young musician that this was how you wanted to play?
Absolutely. As a kid when I played on the street or at a bar, I wanted to sell my CDs and make some money, so I'd try to make it as epic as I could. I'd play as fast as I could and try to leave the biggest impression possible. And it worked for me—I sold a lot of CDs. Those experiences stick with you, and when I play now, I still want to make the audience go crazy.

You mention Stevie Wonder. Who else inspires you musically?
I've been listening to a lot of Dylan lately, for the lyrics. I have an appreciation for modern bands like Bon Iver and the Black Keys. The scene over in the UK is quite strong right now, too.

You Tube It

To appreciate Joe Robinson's fretboard wizardry, you need to see him perform. These videos illustrate his awesome command of both acoustic and electric 6-string.

Wielding his Gretsch in a rocking trio, Robinson performs one of his originals at The Basement, an intimate Nashville club.
YouTube search term:
Joe Robinson - Lethal Injection

Tearing up his Tele, Robinson pays tribute to Jeff Beck with an original instrumental.
YouTube search term:
Joe Robinson Live Budapest 2010.11.28.

Robinson displays his fingerstyle chops in this solo acoustic instrumental. Dig the Lenny Breau-inspired harmonics!
YouTube search term:
Smokin Joe - Midnight In Nashville

Robinson plays a solo acoustic piece from *Time Jumpin'*—his 2009 US debut— onstage in Germany.
YouTube search term:
Joe Robinson - Bergeson Fries

As far as giving me a foundation in guitar, when I was starting off in Australia, seeing Tommy Emmanuel for the first time hit me like a ton of bricks. I thought, "I have to learn how he does that." I was so compelled to absorb his approach that I spent the next three or four years watching all his videos. Not that I wanted to copy him, but I wanted to use his techniques to make my own music.

There were local players where I grew up who inspired me, too. Someone who affected me in a big way was Alan Morgan, a guitarist who played a mixture of R&B, blues, and bluegrass—all with a great feel. I'd go wherever he was playing and stare at him from side stage. When I'd ask how to do this or that, he'd show me.

Now that you're performing some of the songs from the new album live, what has the reaction been from your fans? Do people come expecting Joe-the-instrumentalist from *Time Jumpin'* or are they familiar with this record and willing to accept you as a singer, too?
The last two times I've been to Europe I've taken a trio, so the audience there has gotten a taste of my electric sound. And I've already arranged the album's songs to work onstage with just me and an acoustic guitar, so with the exception of "Lethal Injection," "Out Alive," and "Uli's Jump," I can perform all of them as a soloist.

In Europe, the acoustic guitar thing really flies, but after 90 minutes of instrumental music, I can sense a little fatigue in some crowds. For me, I'm a guitar player first, but the vocals make the show more interesting, especially for non-musicians.

***Introduce* sounds carefully manicured and very polished. What's your take on that?**
We started recording a year ago and now that the album is out, I can look back with a real perspective on that music. There's not a lot of improvisation on the album—it's pretty much all written and composed. I'm really proud of *Introduce*, but I'm also really excited for the future. This was an important transitional moment for me and a stepping-stone for what I want to do next.

And what's that?
I'd like my next project to be a lot more raw and have a certain grit to it. I feel I've made my statement with this album and now it's a matter of relaxing with who I am and really trying to create stuff I love. There are thousands of albums released every year, and I feel to stand out in the crowd, you have to capture a real energy and an authentic performance. And the rawer and more real the music, the more powerful it is.

I like the Black Keys for that reason. Adele's latest record is raw in a lot of ways, with alternative aspects in the production, and it's pretty cool to see people gravitate towards that. The other day I was listening to *Disraeli Gears*, the old Cream album. There are so many imperfections in it, but that's what makes it an amazing record. Down the road I'd like to do an album that's totally feel and not written, one that offers a lot of improvisation. That will be liberating—just go in and do it.

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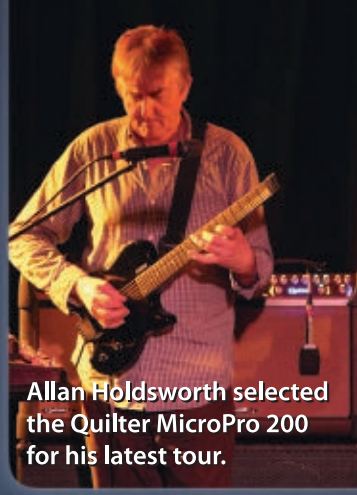

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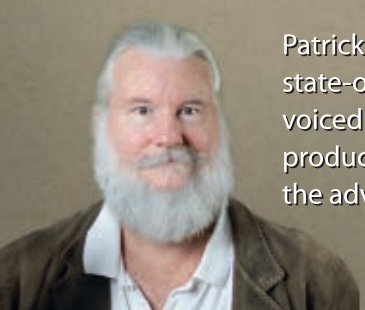

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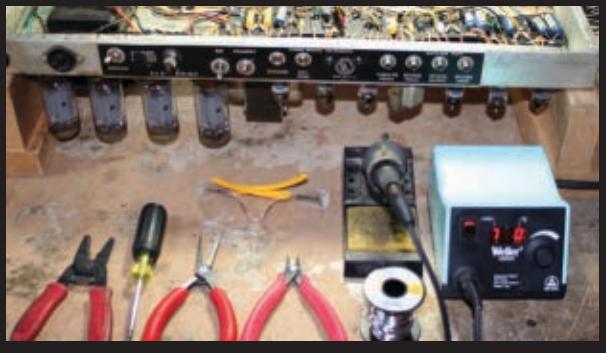
8 GUITAR-AMP MODS FOR NEWBIES

REMOVING OR REPLACING A SINGLE COMPONENT IN YOUR AMP CAN HAVE SIGNIFICANT IMPACTS ON BOTH ITS TONAL CHARACTER AND THE AMOUNT OF GAIN OR HEADROOM ON TAP. HERE WE GUIDE YOU THROUGH SEVERAL EASY PROJECTS YOU CAN DO IN RELATIVELY LITTLE TIME WITH A FEW BASIC TOOLS.

BY TIM SCHROEDER

Essential Tools

No job can be done well without the proper tools—in fact, attempting to do so usually results in a nightmare of frustration. For the mods we're exploring here, I recommend the following tools:



- Standard-size Phillips and/or flat screwdrivers (for re-moving and se-curing the chassis)
- Wire cutters/strippers
- 25–40-watt soldering iron
- Acid-free rosin core solder
- Safety goggles
- Needle-nosed pliers
- A copy of your amp's circuitry schematic

It's in a guitarist's nature, I believe, that we can't leave well enough alone. Most of us have an ideal sound (or sounds) in our heads, and we won't rest until our vision is realized. We can have a perfectly fine guitar or amplifier, but we still have an inherent urge to tinker with it until it's "just right" in feel or tone. On this premise—as well as the fact that many of us are on budgets that don't allow us to buy every amp that strikes our fancy—the idea of modifying an amp we already own strikes a very appealing chord for many players.

Of course, before beginning any sort of amp modification, you've got to pinpoint exactly what you want to accomplish. And you have to keep in mind that an amp is full of many parts that interact with and affect one another, so even small changes to any of these parts can yield major differences in tone and performance. However, this exponential effect that small changes can have on tone means there are many relatively easy ways in which even inexperienced but adventurous DIYers can mod their amp.

Here we present eight short projects that pretty much anyone with rudimentary soldering skills can tackle. Even better, the mods we're detailing here are all reversible. So if they don't suit your fancy or you need to return your amp to its stock circuitry (for example, to sell it), you can do so without much trouble.

MOD 1:

Swap Preamp Tubes to Adjust Headroom

One of the most common things guitarists request from us at our shop (schroedereaudioinc.com) is the ability to get more or less headroom—either cleaner tones at higher volumes *or* more overdrive or distortion at lower volumes. Let's begin by looking at some simple ways to alter your amp's headroom.

ABOVE: You can alter your amp's headroom by swapping out the first preamp tube in its first gain stage—typically the small tube furthest from the power tubes. In this picture of a Fender Twin Reverb amp chassis, the power amp tubes are the two large glass bottle-like things at far left, which means the first preamp tube of the first gain stage is the small valve at far right. The phase inverter preamp tube is the third from left.

BELOW: A 12AX7 preamp tube (aka ECC83, left) typically has a gain rating of 100 and yields more distortion, while a 12AT7 (ECC81) has a cleaner gain rating of 70.

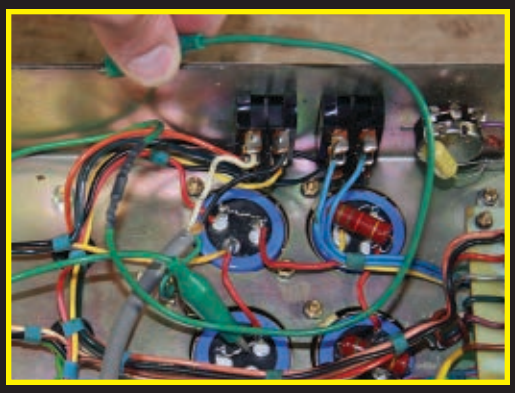
The first preamp tube (aka "valve") in an amp's circuit is used in its first gain stage(s) of an amp. It's usually a 12AX7 (aka an ECC83 in Europe and abroad), and it's the small tube located farthest from the larger power tubes. Typically, a 12AX7 has a gain rating of 100. One simply way to achieve more headroom in your amp is to replace this tube with a 12AT7 (aka ECC81), which has a gain rating of about 70 and will yield cleaner sounds than a 12AX7. Conversely, players who have an amp with a 12AT7 in the first gain stage can get more gain and overdrive from their amp by swapping it for a 12AX7.

Warning!

All amplifiers contain lethal voltages. If after reading through this entire article you still feel unsure of your capabilities, please refrain from performing any modification to your amp. If you decide to proceed, make certain the amp is unplugged and that all tubes have been removed before beginning. Next, remove the amp chassis from the box it is housed in and turn it upside down so the circuitry is exposed and easy to work on.

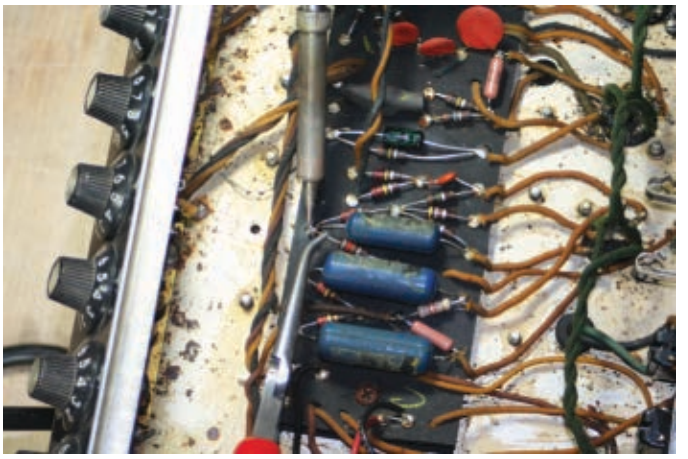
The most dangerous voltages in an amp are stored in electrolytic capacitors, even after the amp has been unplugged from the wall. It's imperative that these capacitors are discharged before proceeding with any work on the amp. The best way to do this is with an alligator clip wire with a 100K resistor in series to ground. Clip one end of the wire to ground and the other end to the positive side of each electrolytic capacitor. This will bleed off any voltage that may be stored in the capacitor. To be certain all voltage is discharged, use a voltmeter set to DC voltage. After about a minute, the capacitors should be fully discharged. If you are unsure of this procedure, consult your local amp tech.

ABOVE: Common tube-amp capacitor types.



BELOW: To confirm that voltage has been discharged, measure each cap with a voltmeter set to DC voltage and make sure none is detected. Touch the black lead to the chassis, and the red lead to the positive cap terminal.

RIGHT: Before touching anything inside the chassis of a tube amp, bleed off any lingering fatal voltages being stored inside by attaching one end of a 100 kΩ resistor (inside the black shrink wrap in the middle of the green wire) to ground and touching the other end to the positive side of each electrolytic cap in the circuit (the blue ones) for a full minute each.



Amp headroom can also be adjusted by swapping the resistor in a negative-feedback circuit for a different value. Here, the resistor ringed with gray, red, brown, and silver value marks is being desoldered, one lead at a time, to make way for another.

You can further alter your amp's headroom by simply changing its phase inverter, which is the preamp tube located right next to the power tubes. It sends the signal from the preamp into the power amp, and swapping it with one that has a higher or lower gain rating (i.e., a 12AX7 vs. a 12AT7) will also adjust the amount of gain being sent to the amp's power tubes.

ADJUSTING THE VALUE OF THE RESISTOR CONNECTED TO THE CATHODE OF ANY OF THE GAIN-STAGE PREAMP TUBES CAN GREATLY AFFECT THE OVERDRIVE CAPABILITIES AND HEADROOM.

MOD 2:

Swap Negative-Feedback Circuit Resistors to Adjust Headroom

Another way to increase your amp's headroom is to adjust the size of the negative-feedback resistor. Because the earliest tube guitar amps from the 1950s weren't intended to overdrive (though it wouldn't be long before rock 'n' roll pioneers harnessed the glorious sound), the negative-feedback circuit was implemented as a way to reduce distortion. It does so by taking a very small signal from the amp's output and injecting it back into the gain stage—only it's out of phase with the output. This causes phase cancellation and affects the amp's overall gain character.

The negative feedback resistor located off of the amplifier's output jack. Decreasing its value will increase your amp's overall headroom. In the photo above, the feedback resistor is located between the top two blue coupling capacitors—it's the component with (left to right) gray, red, brown, and silver bands on it, and one of its leads is being gripped by needle-nose pliers. (For complete information on how to read resistor color codes, visit wikipedia.org and search for the "Electronic color code" entry.)

To remove the current resistor and install a new one:

- If you have a soldering iron that lets you set exact temperature, set it for between 700 and 800 degrees Fahrenheit.
- Heat the solder joint on one end of the feedback resistor and gently lift it out of the circuit, then do the other.

NOTE: Be careful not to leave the soldering iron on the solder joint for too long as doing so could damage the component.

- Bend the tips of the new resistor's leads to fit neatly in the two vacated solder joints.
- Snip off excess length on the leads of the new resistor.
- Heat one of the solder joints and put one end of the resistor in place, and then proceed to the other solder joint.
- Add a bit of solder to the new solder joints so that there's a solid connection.
- Repeat the steps above with different value resistors until you are satisfied with the increase or decrease in headroom.

MOD 3:

Swap the Cathode Resistor to Adjust Headroom

Adjusting the value of the resistor connected to the cathode (the main filament-like part that forms the core of a vacuum tube) of any of the gain-stage preamp tubes can greatly affect the overdrive capabilities and headroom. The *bias* of a preamp tube—how much voltage is running through it—occurs in the tube's cathode.

Not all amps have a cathode resistor, but when they do, it's wired in parallel with a cathode capacitor—which can also be swapped out for one with a different value to increase or decrease headroom (see **Mod 4**, below, for more on this).

Generally, the range of values for the cathode resistor is 820 ohms (Ω) to 10 kΩ, but the most common value is 1.5 kΩ. Decreasing the value causes the tube to bias hotter, which in turn causes the tube to overdrive quicker, yielding a hairier tone due to the increase in gain. It follows that increasing the value of the cathode resistor causes the tube to bias cooler,

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Biffy Clyro

Andy Johns
Engineer/Producer

Hayden

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Shown here is our Fender Twin Reverb. Its 1.5k Ω cathode resistor is marked by the brown, green, red, and silver bands.

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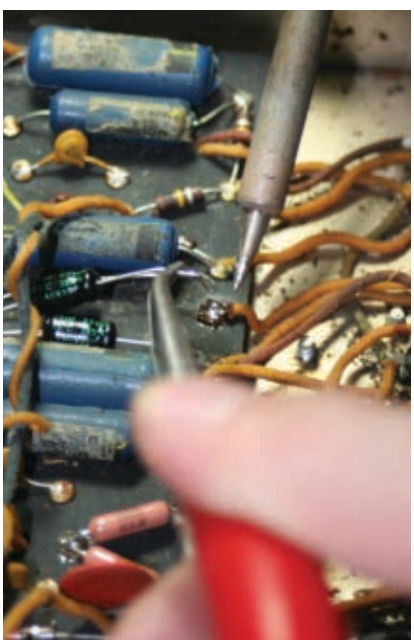
lowering the gain of the tube and thus increasing clean headroom. To change the value of the cathode resistor, refer to the steps in the **Mod 2: Swap Negative-Feedback Circuit Resistors to Adjust Headroom** section.

MOD 4:

Swap the Cathode Capacitor to Adjust Headroom

As mentioned above, the cathode capacitor also has a significant effect on an amp's available gain. The larger the value of the cathode capacitor, the more low end is accentuated in that gain stage. The smaller the value of the cathode cap, the more high end is accentuated. The typical range of cathode capacitor values is anywhere from .68 µf to 250 µf. A typical cathode cap value in lower-gain amps (including the Fender Twin we've been working on here) is 25 µf. In higher-gain amps such as a Marshall Super Lead, you would expect to see a cap value of .68 µf. The reason higher gain amps use cathode caps with such small values (especially in the early gain stages) is to tame the potential for too much bass to be amplified—which could result in the



To increase or decrease gain, you can swap out the cathode capacitor (here, it's the black component with green writing) with one of a different value—a lower value for more gain, higher for more dirt.

The reason higher gain amps use cathode caps with such small values (especially in the early gain stages) is to tame the potential for too much bass to be amplified.

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amp sounding too muddy when pushed into overdrive.

Some amplifiers—including old Supros and Magnatones—do not have cathode caps on the first gain stage(s). You can increase the gain of these amps by adding a cathode capacitor in parallel with the cathode resistor of that gain stage. To change the value of this cathode capacitor, follow the rules for changing a resistor in the two previous sections.

NOTE: Cathode capacitors are often electrolytic—meaning, they store electrical charges and therefore have + and – poles that must be installed in the proper direction. It's therefore imperative that you pay special attention to where the existing capacitor's + and – poles are oriented before removing it. The negative side must be attached to ground, and the positive side of most electrolytic caps is the side with a lip near the end. The negative side will not have such a lip and will be flat.

MOD 5:

Swapping the Coupling Capacitors to Adjust Bass Response

The second most common request we get at our shop is to change the overall tonal character of an amplifier. As with changing an amp's gain, small changes in the circuit can greatly affect the tone.

If you're looking to get more (or less) bass out of your amp, its coupling caps—which act as frequency filters—are great candidates for modification. Coupling capacitors typically have values from .022 µf to .1 µf. The purpose of coupling caps is to block DC voltage and can be found in several places in the circuit. The specific ones that we'll be dealing with are situated between the phase inverter plates and the power-tube grids. Smaller values such as .022 µf attenuate the bass in the preamp, preventing it from being passed into the power amp section. Larger values such as .1 µf allow more bass to pass through. In a bass amp, you may see up to .47 µf.

Naturally, the idea when modifying coupling capacitors is to get the great bass response you desire without causing the amp to sound too boomy. High-gain amps typically have a smaller value than clean amps for this reason.

Naturally, the idea when modifying coupling capacitors is to get the great bass response you desire without causing the amp to sound too boomy.

Coupling caps are rarely electrolytic and will therefore function without regard to polarity. That said, certain types of coupling caps—including film and paper-in-oil varieties—*may* yield small sonic differences depending on the direction of travel.

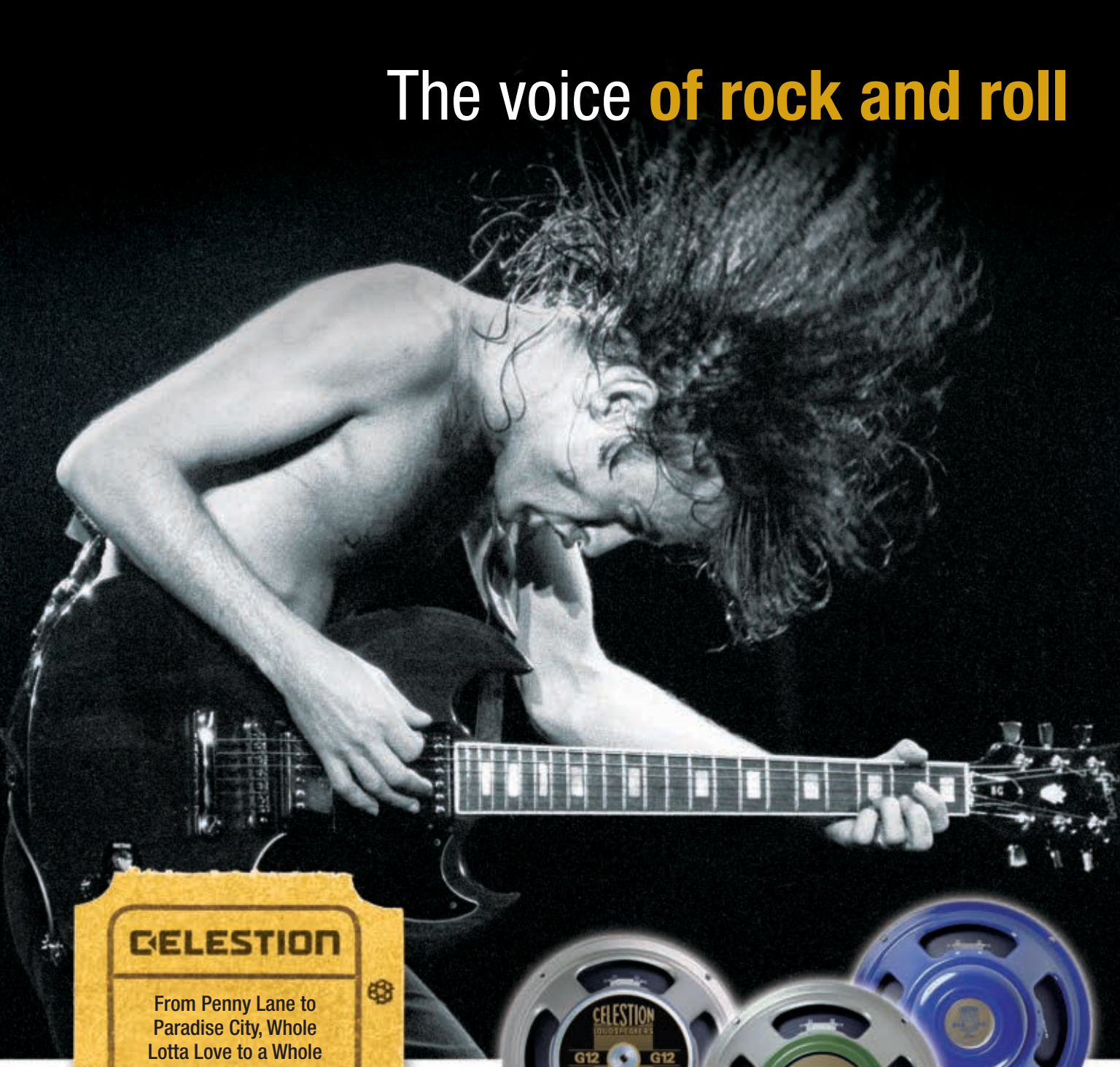
MOD 6:

Swapping Tone-Stack Resistors

The part of an amp's circuit that governs the ranges of its tone controls is known as the *tone stack*. This part of the circuit is most commonly a combination of three potentiometers (for bass, mid, and treble knobs), three capacitors, and a resistor called the *slope* resistor. One simple mod that will change the tonal character of your amp is to experiment with the value of the slope resistor, which controls how frequencies are divided over each tone control. Simply put, the slope resistor changes the

To alter bass response, you can swap coupling caps for different values. In our Twin Reverb example, the coupling caps are the two blue cylinders at the end of the circuit board (closest to the power tubes).

The voice of rock and roll



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[To tame treble in] a Marshall amplifier such as a Super Lead, you simply remove the capacitor that lies across two legs of the volume pot.

Another way to alter your amp's frequency response is to swap the slope resistor for one of another value. In this picture of our Twin, it's the one with brown, black, yellow, and silver bands being gripped by one lead with needle-nose pliers.

slope of the midrange dip if it were charted on a frequency-response chart.

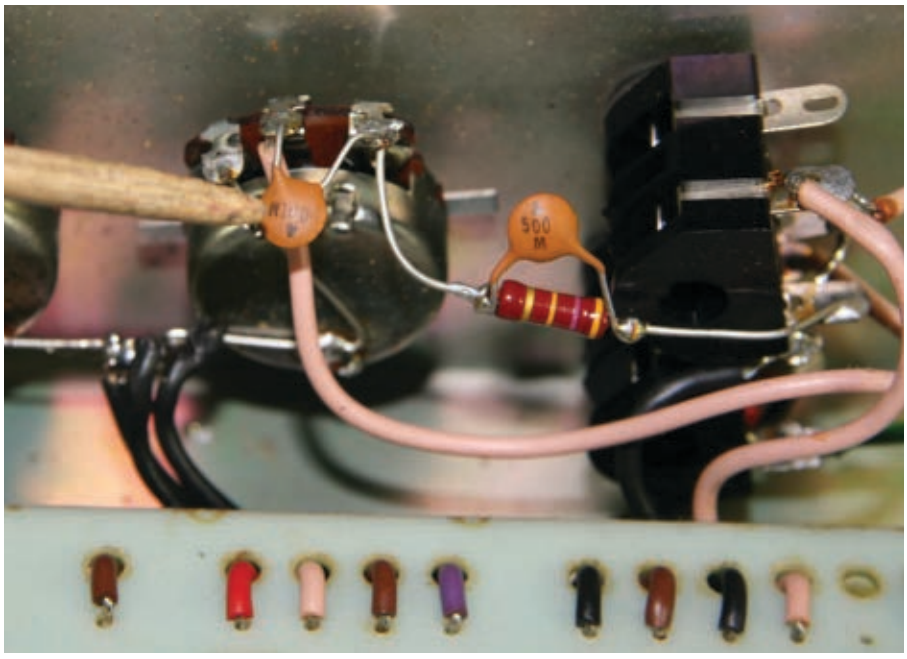
Typical slope-resistor values range from 33 kΩ to 100 kΩ. A larger value yields a sound with more of a mid-range scoop (i.e., where treble and bass frequencies are louder than the mids). Smaller values accentuate midrange. In our Twin Reverb, the vibrato channel's slope resistor is the 100 kΩ one (with brown, black, and yellow rings) attached to a 100 kΩ resistor on one end and two blue .1 µf coupling capacitors on the other. To change the value of the slope resistor, follow the previous instructions on how to replace a resistor.

MOD 7:

Removing the Bright Cap to Tame Harsh Treble

If your amp has a treble response that feels too harsh to your ears—especially at lower volumes—you can tame it by removing the *bright* cap. In a Marshall amplifier such as a Super Lead, you simply remove the capacitor that lies across two legs of the volume pot. This cap allows the high frequencies in the guitar signal to bypass being attenuated by the taper of the volume pot, so removing this cap eliminates the amp's severe-sounding highs at lower volumes.

To remove a bright cap, simply desolder the leads or clip them at a point near the lugs on the pot. Be sure to leave enough lead on the cap so that, if you later decide to reinstall it, there will be enough length left to be able to solder it back into place.



To tame treble response in a Marshall head, simply clip or desolder the bright cap on the volume pot. In case you decide to reverse the mod in the future, make sure you leave as much of the capacitor's leads intact (if you decide to clip it) to facilitate easy reinstallation.

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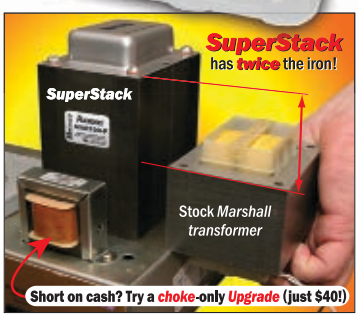

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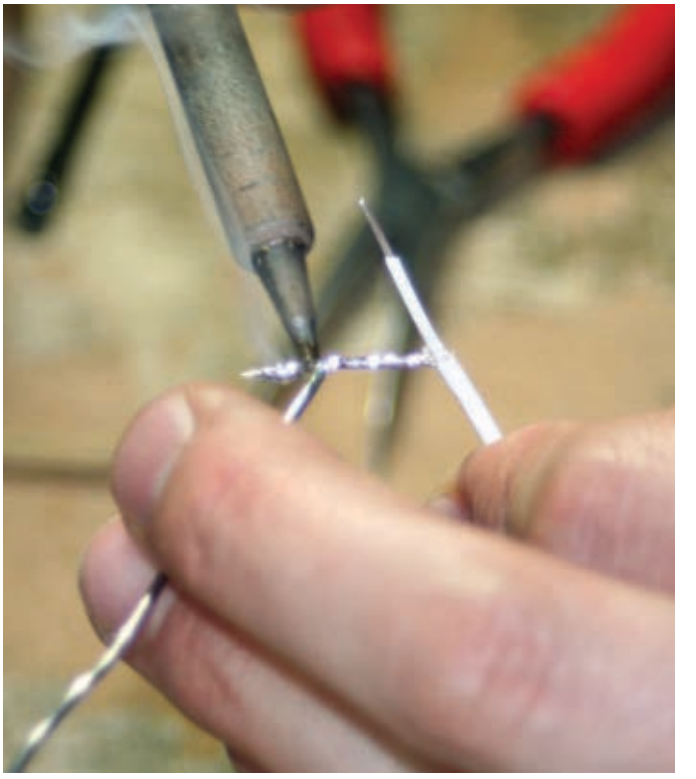

If your amp has a lot of hiss and background noise, you may want to check and see if the wire connecting the input jack to the grid of the first preamp tube are made with unshielded wire. If so, replacing it with shielded wire should decrease noise. Here, we're stripping the shielding from one lead prior to soldering the connection, then tinning the gathered shielding lead that we'll solder to the input-jack side.

MOD 8:

Adding Shielded Wire to Reduce Noise

Our final project here is a mod that will subdue hiss or unwanted background noise in your amp. A lot of the time when an amp is plagued with this malady, it's because it uses unshielded wiring in key sections of the circuit. Strategically replacing these lengths with shielded wire is a fast, easy way to improve the amp's noise floor.

Perhaps the best place to start adding shielded wire is the section going from the amp's 1/4" input jack to the grid of the first preamp tube. The grid in question for a 12AX7/ECC83 or 12AT7/ECC81 tube socket will be pin number 2. Any noise picked up in this part of the signal path is passed through each of the amp's gain stages, getting amplified each time, so adding a shielded wire here should yield significant noise reduction.

To perform this mod on an amp like our Twin Reverb:

- Snip the lead or desolder the wire where it attaches to the input jack. (A standard soldering iron will work for desoldering, but a solder sucker/desoldering pump will create a cleaner joint for the new connection by removing excess solder.)
- Snip or desolder the other lead where it attaches to the grid pin of the preamp tube. The grid on a 12AX7 will be pin 2 or 7
- Solder the two leads from a length of new shielded wire to the newly vacated spots.

Ground the new wire by soldering the shielding on the input-jack side to the ground on the input jack. On a vintage Fender-style amp, this is the lug that is making contact with the chassis. Only ground this shield on one end.

Go Forth and Mod

I hope you've found some modifications here that seem like projects worth pursuing on one of your amps. Although these projects yield pretty significant and impressive results considering how little work is involved, I know it can be pretty daunting to poke around inside a device with significant safety risks for the first time. The safety measures we've outlined should alleviate any danger, however if you have any doubts about your ability to pull these off, it's always better to be safe than sorry. But even if you decide to have a qualified tech execute these mods for you, at least this information will give you a better understanding of some of the nuances and possibilities of guitar amp modifying.

NOTE: It's a good idea to *tin* the leads of the wire you are installing before attempting to solder it into place. To do this, simply wick a small amount of solder onto each bare end of the new wire. Tinning the new wire before installing it improves the quality of connection it makes in the circuit.

NOTE: Often the shielding on shielded wire is braided and needs to be unwound. I like to use a pointed object to get between the braided fibers to unravel them. Once you've unraveled enough shielding on the end that will be attached to the input jack, gently twist the fibers together to create one uniform shielded-wire lead—which you'll then want to tin.

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GYPSY NOUVEAU

Combining a love for Pink Floyd, composer Howard Shore, and astronomer Carl Sagan, **Stephane Wrembel** exercises his compositional chops on his latest album, *Origins*.

BY JASON SHADRICK

Photo by J. Elon Goodman

Nestled in the South Slope neighborhood of Brooklyn is Barbés, a quaint performance space that brings a little bit of Paris into the concrete jungle. Owned by two French musicians, Barbés is part listening room, part art film mecca, and the general community center for the area's artists and musicians. On most Sundays, if you wander into the back room, you can find one of the city's best-kept musical secrets. Guitarist Stephane Wrembel holds court during this weekly gig and not only pushes the boundaries of what is considered Gypsy jazz, but gathers influences ranging from Greek and North African music to Led Zeppelin and Pink Floyd into an entrancing, yet accessible style.

After graduating from Berklee, Wrembel planted himself in Brooklyn among a healthy community of musicians, artists, and other creative types that bolstered and inspired his muse. Unlike many of his derivative contemporaries, Wrembel pushed the ghost of Django Reinhardt aside when making his latest album, *Origins*—a collection of fresh and sometimes cinematic acoustic tunes full of precise picking and hummable melodies.

Wrembel's music caught the ear of Woody Allen (who happens to have a deep love for all things Gypsy jazz), which led to Wrembel's composition, "Big Brother," being chosen for the soundtrack to Allen's *Vicky Cristina Barcelona*. That partnership continued, and soon after, Allen asked Wrembel to write the theme for *Midnight in Paris*, which Wrembel performed at the 2012 Academy Awards. It was quite a break for the DIY musician, who reflects on his big year by sharing with us his affinity for stargazing, his compositional style, and why he views the Django community as one big competition.

Tell me about your childhood in France. When did you first pick up the guitar?
First, I was playing the piano. I'm originally from Fontainebleau–which is the home of Impressionism. I studied piano at age 4 and was classically trained in the Impressionist style by an old piano teacher who knew Debussy, so I was trained in that old traditional school. I started playing guitar when I was 15 and I was playing more '70s rock like Pink Floyd and Zeppelin. When I was about 19 or 20 I really wanted to expand my horizons so I practiced Django stuff, jazz, Indian music, African music, and stuff like that.

Did your parents push you into music?
I have two sisters, and my mom really wanted us to play an instrument. We started with the piano because that is what she knew. She wanted us to continue with an instrument and when I was 15 I said, "I really wanted to play the guitar." When I was a teenager I really loved David Gilmour—he is still my favorite—Frank Zappa, Jimi Hendrix, and Jimmy Page. Loved Andy Summers, too.

So Django wasn't one of your primary influences when you were younger?
Django's music has always been around, especially because I am from the area where he settled. For us, it was just traditional music, much like bluegrass is here. It's always been there but I never really paid attention to it. It was only when I studied jazz and French traditional music that I really started to discover him.

Did you move to the States specifically to study music?
I have been fascinated with the United States since I was a kid. I always wanted to move here. It was a childhood dream. Being a musician, going to Berklee was another dream from when I was a teenager. When I was 26 I got a scholarship and was able to go get my tutorings. I concentrated mostly on jazz and all kinds of world music. I studied Indian music there, Western African music, and Greek music a little bit.

Wrembel plays his Holo Nouveau at the intimate Empire Hotel Rooftop in NYC on June 18, 2012. Photo by Scott Bernstein

What was it that most interested you in those types of music?
To me, music is only one thing—it's just music. Different countries approach the language from different directions, but they all melt together at the end. Indian music is very good for studying the architecture of rhythm; you understand rhythm way better with Indian music. And their ways of practicing are amazing. With African music, they have an amazing rhythm and the way they use certain colors of percussion, I can do on guitar. The jazz music is very important because it makes you a more confident improviser over complicated chord progressions.

When you learn to drive, you put your hands on the wheel and learn everything internally. After that you are able to drink a coffee and drive, so the rule becomes "drive." It's the same thing with the guitar.

When did you make a choice to focus more on acoustic music?
I don't really focus on acoustic music, it has just been added to my playing. It was only really when I discovered Django that I learned to play acoustic instruments. If you give me an electric guitar, I can play like a

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real electric guitar player, you know? It's just been added to my arsenal of techniques. I find more power in the acoustic instrument than the electric instrument. It's also because that is what's happening [with me] now. I also use electric sometimes, although I haven't recorded with it yet but I have projects for that.

What type of projects?
You would be surprised. It's really the same thing. That one style, whether I play electric or acoustic, it doesn't really change much because I play the acoustic really like an electric player. But with the acoustic technique I give out as much power as, say, a Les Paul through an amp with distortion.

Do you feel that your technical approach changes when moving from acoustic to electric?
It doesn't really change because once your technique gets better you have ways to make the guitar ring in a very different way. You can use the sympathetic ringing of the guitar, which is a type of control that's a bit more advanced. That is something I couldn't do before so even when I am playing a distorted guitar, I use the sympathetic vibration of the other strings and it makes the sound bigger.

Do you use a Django-style picking technique?
It was completely inspired by Django and playing the oud.

Can you explain how that style works?
It's not only the right hand but also the left hand. The right hand doesn't exist all by itself. You can't really talk about one without the other. Basically, the thing is you have to press hard with the left hand on the strings—that's very important. You have to make sure to put

BOB HOLO ON STEPHANE WREMBEL'S NOUVEAU GUITAR

When luthier Bob Holo first met Stephane Wrembel, the idea of creating a guitar for the picker hadn't crossed his mind. But then the two spent a night talking about tone and inspiration. "That guitar wouldn't exist without guys like Stephane. I met Stephane, Adrien Moignard, Mathieu Chatelain, and Gonzalo Bergara at a festival in Boston in the mid-2000s and it really seemed as if they were starting a rebirth of this music in a 'new school,' so to speak," remembers Holo. Due to this original approach, Holo decided to create the "Nouveau" model, while also taking some of Wrembel's advice to heart.

"He was moving more and more toward the acoustic side and we had a long talk one night," Holo explains. "He told me, 'Bob, don't live in the shadow of Django, live in the light of Django. He would want it that way.' It's easy to forget that with the familiarity of his music these days and the post-bop/acid/atonal jazz that has come since, but back when Django was playing his music, it was way out there." The idea stuck with Holo, who was deep into studying the guitars of some of the early master builders.

After analyzing some of the builders who moved from Italy to France in the 1930s—such as Busato, DiMauro, and Bucolo—Holo learned that they had taken inspiration from romantic guitar builders from the previous century. "They cut their teeth in Italy building budget guitars for various companies and then they came to France to build their names, inspired by political freedom and the birth of jazz," says Holo.

Holo was not only looking at the established masters of the craft for guidance, he also talked with many young artists to see what they seek in a Gypsy-style guitar. "As I talked with these incredible guitarists, they'd always say something like, 'Oh Bob, I played this [vintage maker] and it was so beautiful. It had this [element of tone] and it had that [characteristic of attack or decay] and I was in love, but it was just so hard to play and in the end I'm not sure that the tone would fully translate to modern work.' Throughout all of this I kept hearing Stephane's voice: 'Light of Django ... innovate.'"

The finished version of Wrembel's Nouveau sports a Western red cedar top with the back and sides containing a layered mixture of Honduran rosewood, walnut, and mahogany. Holo went with a 670 mm scale length and stuck with the Honduran rosewood for the fretboard. The guitar was set up with Argentine Savarez .010 strings, but just like Django, he switches out the first string for a .011.

With a background in sound and design, Holo began the journey to understand why these old guitars sounded like they did. He also wanted to incorporate the ideas that modern players were asking for. "I kept building and taking them to festivals and getting feedback," says Holo. "One year I asked Mathieu Chatelain for his feedback and he said, 'Here's my feedback: How much do you want for it?' My jaw must have dropped because he started laughing and said, 'You should have seen the look on your face just then, but I'm totally serious. How much?'"

Holo opened shop in the Pacific Northwest soon after, and new-school Gypsy players began knocking down his door. "It has been a real-life epiphany working with them to give them the kind of tool they want. It's incredibly gratifying work." For more information on Holo's guitars, visit hologuitar.com.

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the two hands really together, which is surprising to say that but most people don't. It's very hard to have two hands play well together. There are all kinds of things. Like you don't touch the strings because you want them to resonate in sympathy with the rest to create a natural reverb.

Do you follow a strict alternate picking technique?
Usually when you change strings you use a downstroke as much as possible and you use more downstrokes than upstrokes. There's no real rule. It's not as precise as that. It's like when you drive. When you learn to drive, you put your hands on the wheel and learn everything internally. After that you are able to drink a coffee and drive, so the rule becomes "drive." It's the same thing with the guitar.

For your latest album, did you compose specifically for this project or were these tunes laying around for a while?
Almost all of the material was written for this album. "Bistro Fada" was the song I wrote for the Woody Allen movie *Midnight in Paris*. I remade a new version for this album, for sonic reasons and to match the color of this album. There is also "Water is Life," which was written for my first album in 2005, but it was a classical guitar and bass version. We recorded it more like how we perform it live with the drums. Otherwise, everything else was written for this album.

Speaking of Woody Allen, how did he approach you to create the theme for *Midnight in Paris*?
The first time he used one of my songs on his movie [*Vicky Cristina Barcelona*], and the second time his producer called me and asked if I could compose a theme for the movie that would represent the magic of Paris.

Woody tours with his own band all over the world. Did you ever get a chance to play with him?
Nah, I've actually never met him. We talk through his producer. Once it's time for pre-production he is already onto his next movie or some other thing. It's not like we have time to hang out. Busy guy.

When you are presented with a compositional "assignment," like writing a score, how do you approach it? Is your process any different?
Actually, I go blank and move into a trance state. It just happens. When it's time to compose I get in that mood and it lasts for a few days and since I can't score ideas in my head I throw the ideas into GarageBand. I then go back and refine them and it becomes more architectural work. For me, it's very important to have a mood and a musical idea. That's the first thing. After that, I rework it.

Do your ideas usually begin with a melody or a chord progression?
It's all entangled. Once I have a rough idea I spend a few hours to really play around with it—change chords, move the bridge around—so many choices. I usually do that on the spot right after composing a song.

The track "Tsunami" really shows the orchestrated, more scenic influence of movie scores. What composers do you listen to for inspiration?
I listen to movie scores a lot. I listened to a few scores from Hans Zimmer and I have checked out the classic ones like *Jaws* [John Williams]. A score that I really love is the one from *Pi* [Clint Mansell], and I am also a big fan of Howard Shore [*Lord of the Rings*, *Hugo*].

What is it about those scores that draws you in?
I can't tell you. I have no idea. There is just something about it. You know, there is just so much you can't explain about music. I don't go too far as to say I like a certain kind of harmony because it's beyond that. When you listen to music, either something touches you or it doesn't. It's not because of the notes, the notes are the same. It's just something else.

Do you have aspirations to do more movie and soundtrack work?
As of now, people know me and have asked me to score their

YOUTUBE IT

Armed with his cedar-topped Bob Holo Nouveau model, Wrembel leads a quintet through "Tsunami," off his latest album. The band kicks in at 2:57 as Wrembel effortlessly unleashes some of his Django-inspired lines.
Search term: Stephane Wrembel "Tsunami" Live on Soundcheck

This 15-minute performance from Wrembel's weekly gig at Barbés starts with some exploratory drones but gives you an up close look at his right-hand technique.
Search term: Stephane Wrembel at Barbés (2009)

Fronting a trio with rhythm guitarist Ryan Flaherty, Wrembel tackles two of Django's most famous compositions, "Minor Blues" and "Swing 48."
Search term: Stephane Wrembel, Ryan Flaherty – Minor Blues/Swing 48

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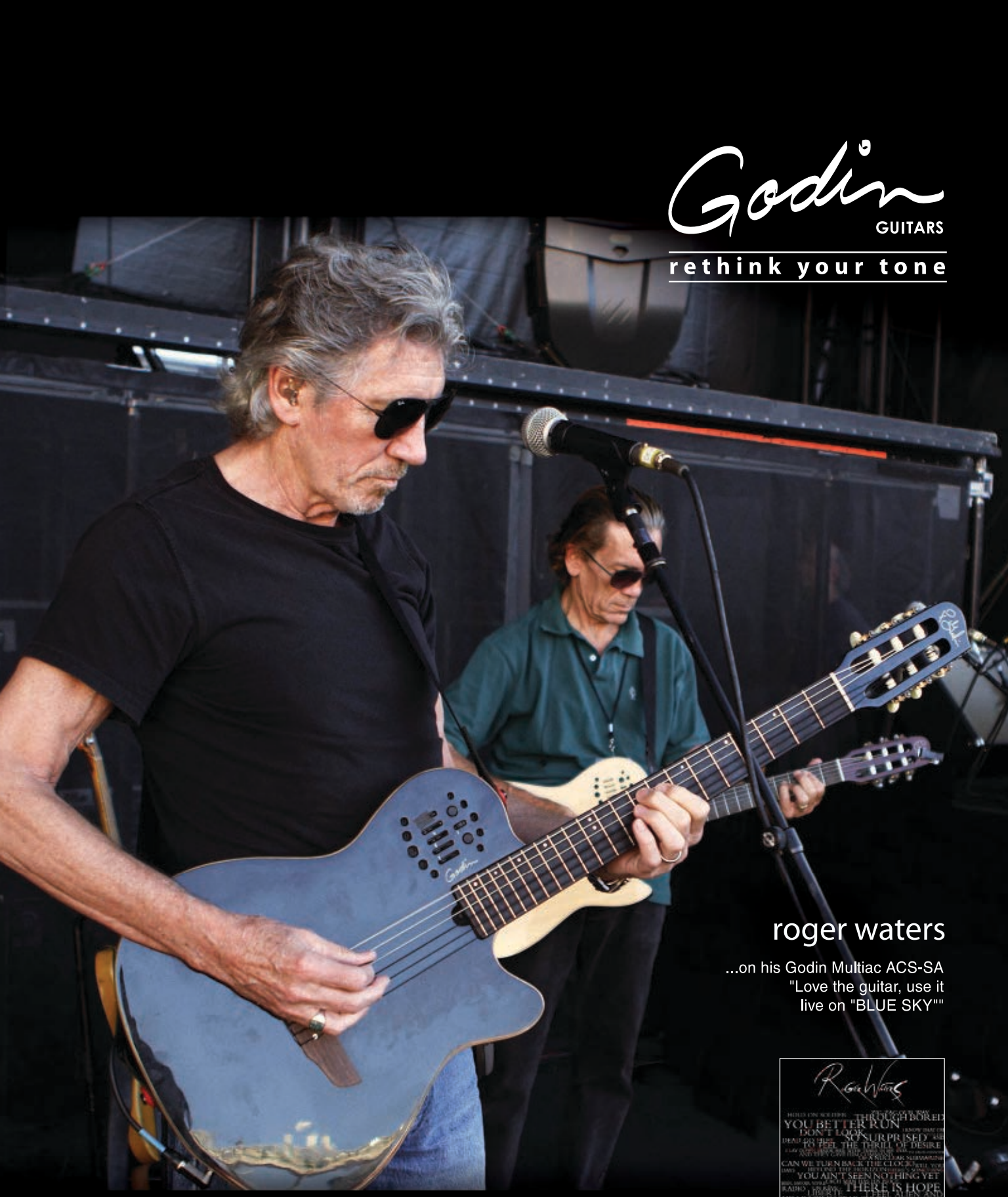

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film. I don't really have much of a clue as to how it comes about. There are agents that do some of that stuff, but I don't really have an agent right now. It's a tough book to open. Usually, when [directors] have a movie, they want to work with someone they already know who will do a certain kind of score. They fall into this security. That's the reason why the whole film scoring industry is held by like, I don't know, 20 composers. There are not many composers who have access to bigger movies.

On "Voyager" you pay tribute to what could be considered an unlikely influence: astronomer and author, Carl Sagan.
He translates to us the wonders of the universe. In his books and everything, I just think he has a way of saying things that are so brilliant at explaining how the universe works. Thinking about Voyager 1, that's his mind. That thing is traveling through space right now. It's like a mind warp. If it hadn't been for him, we wouldn't have pictures of Saturn and Uranus. We wouldn't have pictures of any of the moons. Nowadays, humanity is more concerned about economies for themselves, like just making money and cheap labor instead of looking to the stars. It just makes me dream to think about the stars.

Was the album recorded live in the studio?
We recorded live in the same room without headphones. Just live. Like really live.

How did you mic up the guitar?
I have no clue. That's a question for my producer. I have a few things in my home studio, so I know how to record my guitar and stuff. I think he had two or three mics.

Tell me about the guitar you used on this album.
I used a Bob Holo Nouveau model with a cedar top. [For more information on Wrembel's guitar, read "Bob Holo on Stephane Wrembel's Nouveau Guitar" on pg. 134]

What type of strings and picks do you use?
I use D'Addario strings and a Wegen pick.

Do you use the really thick ones?
It's a little bit thick but not like those huge things.

Like a 2 mm?
Yeah, I don't even really know the size. I recognize them online, click on the photo, and then buy them.

Even though your music has its roots in Django's music, you are pushing beyond playing jazz standards. Do you feel connected to Django's legacy or is he just one of your influences?
The Django community, whatever that is, is a big competition. It's like, "Can I play the new lead faster than you?" I have no clue what is going on with all these guys—I just like to play my music and compose. You can hear the influence of Django and I love to play the acoustic guitar. I found a good sound with that by mixing it up with the drums, but I don't try to play like Django. I am more influenced by Pink Floyd than anything else. My music doesn't really belong to any genre.

You take a pretty DIY approach to your career. What do you have in mind for the next album?
I am completely independent, I don't have a label or anything, so I do everything myself. I put one foot in front of the other. Right now I am taking care of touring behind this album, so I would say for the rest of the year I will tour and then I will think about composing more. I have a few ideas right now that I am putting in the can, more movie-like stuff.

This image shows a structural light test of a Bob Holo Hotclub model. Notice the smaller braces used to help support the bridge. Photo courtesy of Bob Holo

STEPHANE WREMBEL'S GEAR

Guitars
Bob Holo "Nouveau" model with a 50-year-old Western red cedar top and Honduran rosewood/walnut/mahogany back and sides, Gitane DG-340 Stephane Wrembel signature model ("I brought mine in to be refretted, and I decided to leave it fretless! So I can play it like an oud. I usually don't play it live—more in the studio.")

Amps
AER Compact 60

Strings
D'Addario .010s with the top string changed to an .011.

Will it be in the same vein of *Origins*?
I don't know. Right now, while I try to perform this album, I can't think of the next one yet. I started to put bits of things together, but I don't have a definite color yet.

Speaking of Pink Floyd, have you had a chance to see Roger Waters' *The Wall* tour?
I've seen it 12 times—eight in Europe and four in the States—and I have a cool photo of him and I because he came to see me play last year. After that we went out for dinner, it was really fun and such a great experience.

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GRIT
CHUNK
FUZZ
OVERDRIVE
GRIND...

It goes by many names and comes in many flavors. With vintage pedals, however, finding that sweet spot isn't so easy. You have to deal with noise, signal loss, and tones that can change with battery life or when things heat up on stage. Some of those old Germanium-powered effects are more sensitive than a train-car of nitro.

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AMP FIRST-AID

6 Common Tube-Amp Ailments Every Guitarist Can Cure

BY JEFF BOBER

For a good percentage of 6-string guitarists out there, a tube amp isn't just the preferred way to achieve the ultimate tone—it's heresy to consider playing anything that *doesn't* have glowing valves around back. And the longer you play, the more likely it is that you've been through a bunch of brands, models, and output-tube types in effort to find the sound(s) in your head. We all tend to start out with what we can afford, and gradually we graduate to something better—and better again—all to achieve the next degree of tonal satisfaction.

But at some point, most of us tube-amp fans also experience some sort of failure related to this arcane—yet fantastic and sonically satisfying—technology from the 1950s, and it's often at the worst possible time. Unfortunately, there's no practical or accurate way to predict when or where this will occur. But, as someone who has been in the repair and modification business for more than 25 years, I can tell you there's a very good chance it'll happen to you sometime if it hasn't already. Sans a crystal ball and the ability to see into the future, the best way to prepare is to practice preventive maintenance and be prepared for the inevitable with a little bit of basic knowledge and the proper contingent of tools and parts to back it up. To that end, this article will furnish you with must-know information that will help save the gig and allow you to execute basic troubleshooting and repair on your amplifier.

Gig-Meltdown Triage

The first and most important tip I can give is to bring a spare amp to every gig. If you notice, quite a few of the players you see in television performances have two amps of the same make. This is generally not for increased volume, tonal variety, or to look cool—it's life insurance. There's no time to change out or troubleshoot an amp in that situation, and it would certainly be an epic fail if you were performing on a late-night talk show and your one and only amp failed during the performance of a lifetime.

I know some of you will say you either can't afford or don't have room for another amp in your car, band van, or on your stage, but your backup doesn't have to be the same model you normally prefer. If you don't have another tube amp that'll suffice, many solid-state options on the market offer an affordable solution. Remember, your backup doesn't have to blow minds with its peerless tonal ecstasy—it just has to get you through the gig.

Whether you play a combo or a stack, you just need a spare head or combo with a speaker out. Something like an Orange Micro Terror

TUBE-AMP FIRST-AID KIT ESSENTIALS

Every guitarist who plays a tube amp, whether it's a combo or a head and cab, should have the following tools and spare parts on hand to address low level first-aid needs:

- LED flashlight
- Small, inexpensive multimeter
- 1/4" female-to-female mono adapter
- Extra speaker cable
- Small flat-blade screwdriver
- Standard-size flat-blade screwdriver
- Philips screwdriver (for removing rear panel)
- Spare fuses
- Spare rectifier tube (if applicable)
- Spare set of matched power tubes
- At least one spare of each type of preamp-type tube in your amp
- Oven mitt or 'Ove' Glove
- Electronic contact cleaner *without* lubricant (for cleaning tube sockets)
- Electronic contact cleaner *with* lubricant (for cleaning 1/4" jacks)
- Spare amp, head, or power-amp pedal (for emergency gig triage)
- 1' speaker-extension cable with 1/4" male and female
- 1/4" connectors OR a 1/4" female-to-female mono adapter

If your tube combo dies on a gig, a pint-sized solid-state head like the Orange Micro Terror or a small, mic-able solid-state amp such as the Roland CUBE-80XL—perhaps paired with your favorite overdrive/distortion pedal—will get you through the gig and avoid the embarrassment of cancelling mid-show.

Stompbox-sized amps like the Electro-Harmonix Caliber 22 and Diago Little Smasher are an easy-as-pie lifesaver when your tube amp melts down on the go.

head ($149 street) or a Roland CUBE-80XL combo ($379 street) and an overdrive pedal will do—and if the volume isn't raging, you can just mic the cab. Or, if most of your tone shaping comes from pedals and outboard gear, something like the überportable Electro-Harmonix Magnum 44 ($150 street) or Diago Little Smasher ($190 street) can be a godsend—even if you still need to mic your cab. With most tube combos, you can use a 1/4" male-to-female speaker cable or female-to-female mono adapter (which costs approximately $2 street) and another speaker cable to connect the internal speaker to your backup power amp. (Note: Because most cable adapters, whether male-to-female or female-to-female, aren't up to the same specs as quality speaker cable, you should only resort to using them for short periods such as during an emergency onstage meltdown.) All of the aforementioned options are light, portable solutions that can be kept on hand with minimal inconvenience so you can do a quick swap and troubleshoot your main amp during a break or after your gig—when you're not under performance pressure. That's much more expedient than troubleshooting onstage—and it will keep your bandmates and audience happy.

The first step to take when you think there's something wrong with your amp is to make sure it's actually the amp that's faulty.

Troubleshooting After the Gig

Now let's move on to actual first-aid measures. It goes without saying, that if you think your amp may have issues, it's probably either because it doesn't sound right or isn't making sound *at all*. Although it's a bummer to deal with this at all, hopefully it happens at home or during a rehearsal, so it doesn't interrupt a gig.

The first step to take when you think there's something wrong with your amp is to make sure it's actually the amp that's faulty. To do so, first, plug directly into your amp, bypassing any pedals or effects gear. If the amp functions properly, look elsewhere in the signal chain to pinpoint the problem. If it still won't work, try a different 1/4" cable, and if that doesn't fix the problem, use a

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... never replace the fuse with a substantially higher current rating just to keep the amp running.

Because fuses can often appear good to the naked eye, it's best to test them with a multimeter set to read continuity in ohms.

different guitar. If the problem persists, it's probably your amp. The following sections detail some of the most common issues that the average guitarist should feel comfortable detecting and rectifying (forgive the pun) without going to an experienced amp-repair tech.

Is the indicator lamp illuminated?

If not, it's probably because of a blown fuse. Usually a fuse blows due to a failure in the amp, but occasionally it's due to something as simple as a power surge. Because fuses can sometimes look good to the naked eye even when they're blown, the best way to check is to use a multimeter. Set the meter to read continuity in ohms (Ω) and measure across the fuse. If the meter indicates continuity or an almost zero reading, the fuse is good. If not, you'll need to replace it.

To avoid buzzkill during a productive home jam session or band rehearsal, I recommend you get to know the fuses in all your amps and carry extras so you can pop them in and keep rocking. Some fuse holders are easy to find and as easy to operate as a push and a turn. Some require use of a flat-blade screwdriver. Others are an integral part of the line-cord receptacle and require you to remove the cord and use a small flat-blade screwdriver to pry out the

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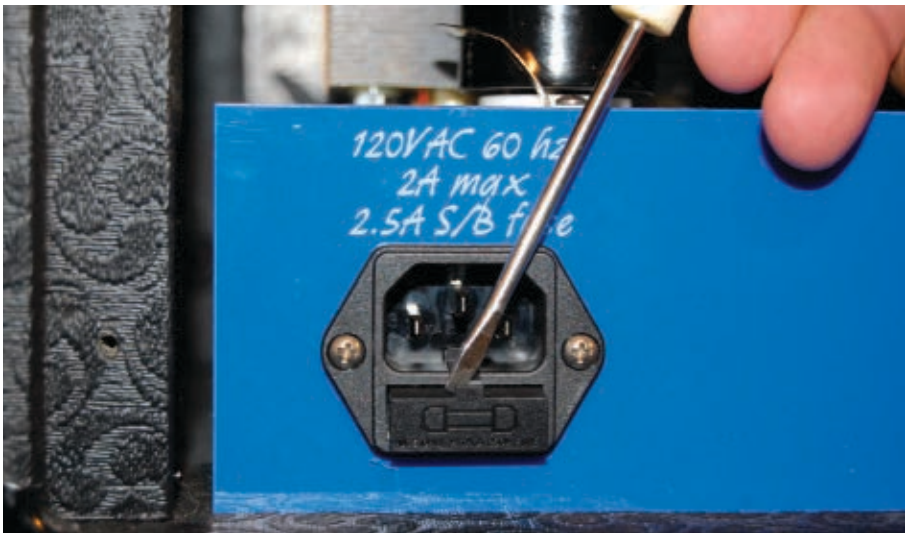

Some fuse holders are integrated with the line-cord receptacle and require a small flathead screwdriver.

fuse holder. Whichever type your amp uses, check the value of the fuse currently installed—especially if you're not the original owner—and make sure it's correct. If your amp has multiple fuses, such as a high-tension (aka "high-voltage" or "HT") or output fuse, make sure you have multiple replacements for each.

One point that's crucial to keep in mind is that you should *never* replace the fuse with a substantially higher current rating just to keep the amp running. If a fuse of the correct value continues to fail, the amp has a problem that needs to be addressed. In such a scenario, possible causes for repeated fuse failure could be:

TUBE TIP

Whether they're preamp or output tubes, valves of the same type (e.g., EL84, EL34, GZ34, or 12AX7) from different manufacturers *do* sound different. Whenever possible, make sure the tubes in your spares kit are from the same manufacturer as those currently installed in your amp. This is especially true with regard to output tubes: While preamp tubes from different companies can result in differences in tone and gain, output tubes from different manufacturers tend to bias up quite differently. So staying with the same manufacturer—and, if the tubes are graded, replacing with the same grade—should avoid having to get the amp re-biased.

In a pinch, you *can* replace power tubes of different brands or grades to get through a gig, but be sure to have the bias checked and/or set as soon as you can for optimal performance, tone, and lifespan.

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An 'Ove' Glove or an everyday oven mitt is a handy tool for dampening hot preamp and power tubes to determine which is bad, as well as for removing them once you've isolated the offending valve.

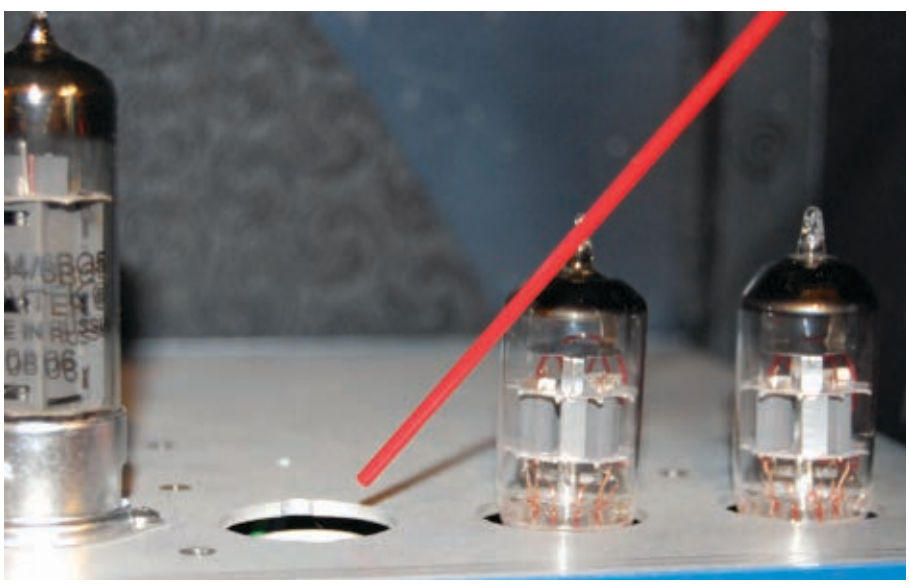
- **A faulty rectifier tube.** If your amp uses tube rectification in its power supply, a shorted rectifier tube can cause a fuse to repeatedly blow. To see if this is the case, locate the rectifier tube in the amp—it's usually the tube closest to the mains (AC) transformer, and it's typically a 5U4, 5Y3, 5AR4, GZ34, or 6X4. (Side note: It's a good idea to know what kind of rectifiers are used in all your amps and to keep one of each necessary type in your spares kit.) After you've located the rectifier, install a new fuse and a new rectifier tube and try the amp again. If it now functions properly, you've found the cause of the failure. If not, replace the original rectifier tube and continue troubleshooting.
- **A faulty output tube.** This is an especially likely culprit if the fuse(s) failing is an HT or output fuse. If you suspect this is a problem, install the new fuse(s) and replace the full set of matched power tubes. If this corrects the fuse-blowing issue, you've found the cause of the failure. However, this unfortunately does not mean the amp has a clean bill of health. Some tube failure can cause internal components to fail. If you replace the power tubes and notice lackluster performance, an increase in hum, or one or more tubes glowing exceptionally red, the amp will need to be serviced by an experienced tech, because more than likely the grid or screen-grid resistor(s) have failed. If replacing the output tubes has not alleviated the problem, re-install the original tubes and have the amp serviced by an experienced tech.

Is the amp making rumbling or glassy, high-pitched noises?

If so, narrow down the source of the noise by turning down any internal effects such as reverb or tremolo, as well as all volume controls. With the amp in operating mode, hit the top of the amp with your hand or fist using moderate force. If this produces the noise in question, read the steps below:

- **If the noise is of a rumbling nature:** It could indicate a faulty output tube. For a quick fix, replace the amp's power tubes with a full set of matched output tubes. If this alleviates the noise, you've isolated and repaired the problem. If the problem persists, replace the original tubes and continue troubleshooting.
- **If the noise is of a glassy or high-pitched nature:** It is likely due to a faulty preamp-type tube. Starting with the preamp-type tubes closest to the output tubes, tap each one with your fingernail or the end of a pencil. If one in particular produces the noise in question, replace that tube. If this alleviates the noise, you've found the problem. If not, replace the original and continue this process with the remaining preamp tubes. If more than one tube produces the noise during the tapping process, a trick to narrowing down the possible offender is to attempt to dampen the adjoining tubes while tapping. This can usually be done by placing your hand on as many of the tubes as possible except the one you're tapping on. If they're too hot to perform this barehanded,

For a quick fix, replace the amp's power tubes with a full set of matched output tubes. If this alleviates the noise, you've isolated and repaired the problem.



If your amp is making loud, static-y sounds when you play, you may need to clean its tube sockets with electronic contact cleaner.

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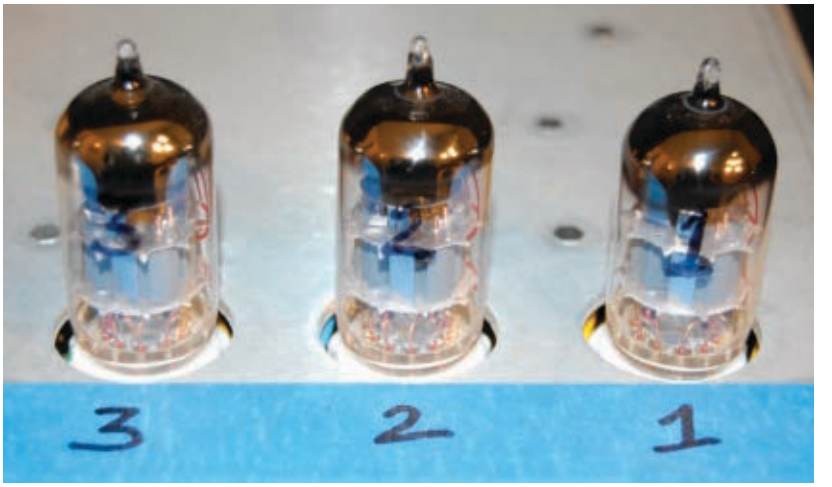
use an oven mitt or 'Ove' Glove. This same technique can be used to find an offending output tube.

If tapping on the amp with all the volume controls set to minimum produces no noise, set all the volume controls to your typical settings and try again. If the noise in question is now present, go through the preamp-tube tap test once again, starting with the tubes closest to the input(s) of the amp—you've most likely narrowed it down to the first couple of gain stages.



Before removing tubes to clean their sockets, label the tubes and their sockets to ensure you replace them in the spots that were producing satisfactory results prior to the static problem.

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REVEREND

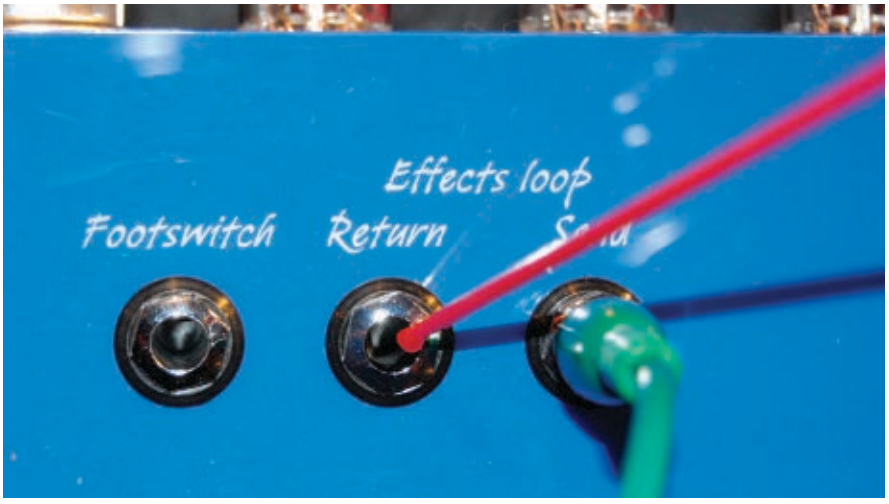
If none of the above troubleshooting techniques produce the noise in question and your amp has a mechanical type reverb (i.e., a spring unit), turn up the reverb control. If the noise is now present, the reverb drive and/or recovery tube could be the cause. Unless you know the specific location of these tubes, you may need to go through the tap test one more time to find exactly which tube is at fault. (If your amp is a blackface or silverface Fender style, looking at the amp from the rear, the reverb-driver tube is generally a 12AT7 and it's usually third from the right, while the 12AX7 reverb recovery tube is fourth from the right, just past the small transformer.)

Is the amp making crackling or popping noises when you're not playing?

If so, this is can be caused by faulty preamp or power tubes. The best course of action here is pure substitution. One by one, replace each preamp tube and see if it alleviates the noise. If none of the preamp tubes seem to be the cause, try replacing the full set of output tubes with your set of matched spares. If no tube substitution alleviates the problem, the amp will need to be serviced, because there's a good chance it has a failing plate or cathode resistor in the preamp.

Is the amp making loud, static-like noises when you play?

This could be due to dirty, oxidized, or compromised connections in the tube sockets. To find out, while the amp is in



If your amp cuts in and out during play, your effects-loop jacks may need cleaning with an electronic contact cleaner that has lubricant.

operate mode, wiggle each tube, starting with the output tubes—which are usually the biggest offender. In order to avoid blurting out expletives in front of children or others with sensitive ears, be prepared for the amp to make a loud crackling noise. If it does, there's a good chance the sockets are dirty or oxidized. More times than not, the fix is a good cleaning—and that's something anyone can do.

To clean the sockets, turn the amp off and remove the tubes once they're cool, being sure to take note of their locations in the amp. I recommend marking each tube and its associated socket with a Sharpie ("1," "2," etc.) while you're removing them. One by one, spray a couple of shots of

In order to avoid blurting out expletives in front of children or others with sensitive ears [when wiggling tubes], be prepared for the amp to make a loud crackling noise.

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To remedy [sound cutting in and out], spray electronic contact cleaner—only this time use the type that *does* have lubricant—into each [effects loop] jack, and then insert and remove a cable 8 to 10 times.

If your amp isn't making *any* sound, it may have a bad speaker connection. You can test whether the speaker is getting a proper signal by connecting one multimeter lead to the sleeve (as shown with the black lead above) and the other to the tip.

electronic contact cleaner, and then insert and remove each tube in the socket 8 to 10 times. (Note: Be sure your electronic contact cleaner is the type *without* lubricant—lubricant can attract dust and debris, which can become conductive.) Once you've cleaned all the sockets, leave all of the tubes out for 5 to 10 minutes so that the cleaner can evaporate. After the sockets are dry, replace the tubes and try the amp again. If the symptom has cleared up, you've taken care of the issue. If not, try the socket-cleaning procedure again—sometimes it can take more than one cleaning to get the job done. If the problem still persists after a couple of cleanings, the sockets may need to be re-tensioned or replaced, which is probably best left to a professional.

Does sound from the amp cut in and out while you play?

This can be due to quite a few things, one of which can be related to the tube sockets (see the previous section on cleaning tube sockets).

If your amp has an effects loop, the problem could also be that the contacts in its 1/4" jacks are dirty or oxidized—especially if you don't use the loop. To remedy this, spray electronic contact cleaner—only this time use the type that *does* have lubricant—into each jack, and then insert and remove a cable 8 to 10 times. Afterward, leave the plugs inserted for 15–30 minutes—or even overnight, if possible. This will leave the jacks' switching contacts open and give the cleaner a chance to dry. You can then remove the cable and try the amp again. (Note: As a preventive measure, it's not a bad idea to perform this type of jack cleaning on your input and speaker jacks.)

Does the amp not make sound at all?

This can be due to an open speaker connection. To check for this, unplug the speaker cable from the head (leaving the other end connected to the cab), and use your multimeter to measure the resistance of the speaker load. Set the meter to read resistance in ohms, connect one lead of the meter to the body (sleeve) of the plug, and then connect the other to the tip. A typical 16 Ω load will measure approximately 12–14 ohms, an 8 Ω load will measure approximately 6–7 Ω, and a 4 Ω load will measure approximately 3 Ω DC resistance with the meter. If you can't get a resistance measurement, try again with a spare speaker cable. (Note: For testing purposes, a 1/4" instrument cable can be used, but you should not use one as a permanent substitute for a proper speaker cable.)

If you have a combo and you can't get a reading at the end of the combo speaker cable, perform the resistance test right at

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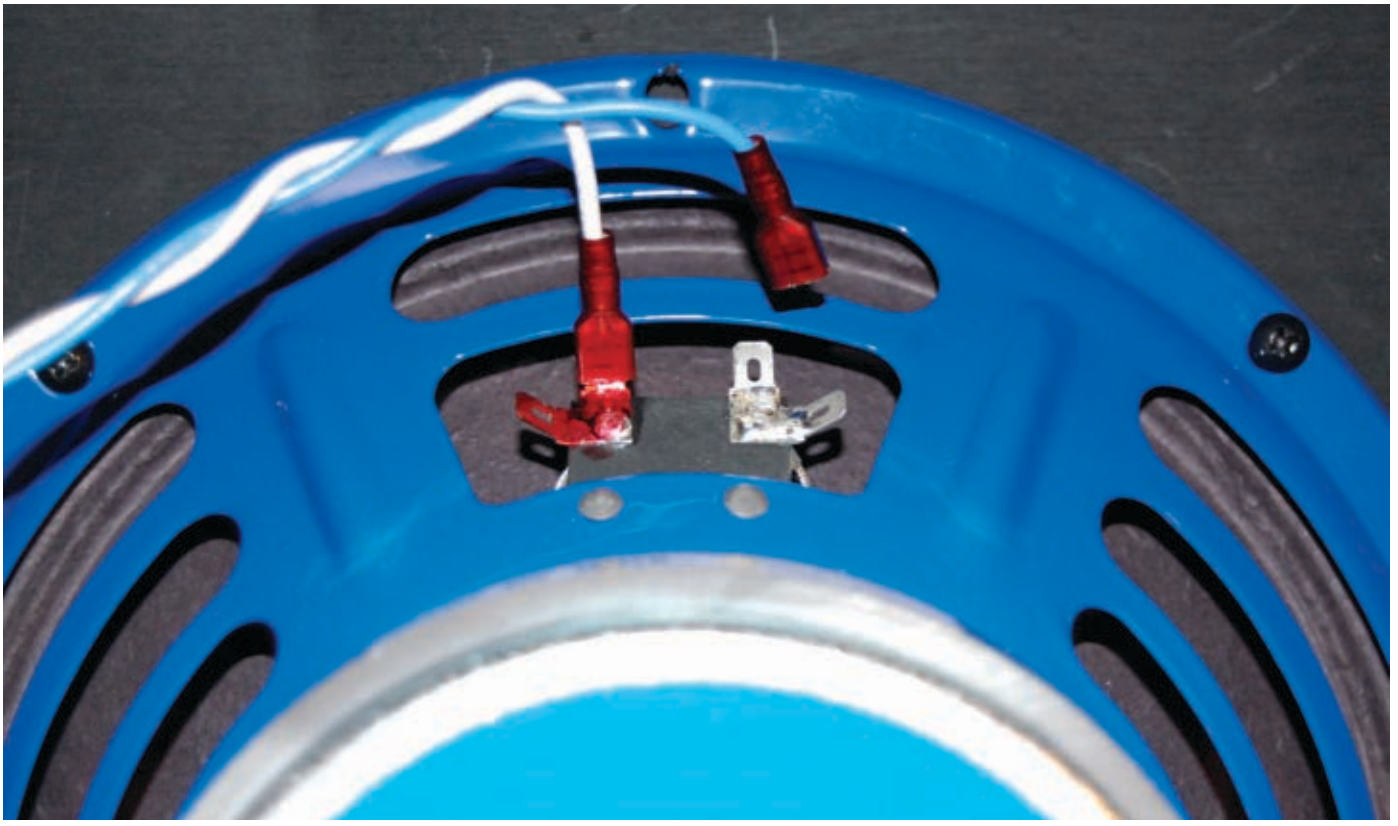


Although they may require a bit of a tug, the quick connects on many combo speakers *can* be removed to facilitate testing of the speaker's resistance—which can help you determine whether the speaker cable has gone bad.

I have seen numerous instances where inexpensive combo speaker cables with the molded plastic ends have failed, so it's not a bad idea to replace these with an upgraded cable as a preventive measure.

the terminals on the speaker itself. I have seen numerous instances where inexpensive combo speaker cables with the molded plastic ends have failed, so it's not a bad idea to replace these with an upgraded cable as a preventive measure—because an open speaker cable can cause substantial damage to a tube amp. If you happen to have a combo where the speaker is hardwired (i.e., it does not have a 1/4" jack you can disconnect from the chassis) and you still wish to check the speaker resistance, you will need to disconnect one of the leads coming from the chassis to the speaker(s). Luckily some amps use quick connects to attach the speaker leads. If this is the case, simply remove one connector from the speaker (this may take some force, but it *will* come off) and measure the speaker resistance by connecting the meter leads directly to the speaker terminals. If your hardwired speaker doesn't have quick connects, you'll need to unsolder one of the leads. (Note: Checking speaker resistance with the speakers still connected to the amplifier will result in a false reading. Because the amp's output-transformer resistance is extremely low, it will cause your reading to look like the speaker(s) are shorted, which is almost never the case.)

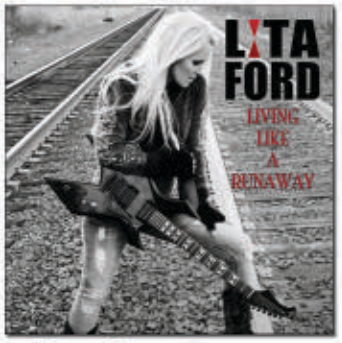
Be Prepared—and Don't Get in Too Deep

A number of issues with tube amps can be alleviated by even the most risk-averse and electrically un-inclined guitarist using the tools and methods discussed here. The most important thing is to have the proper instruments and supplies on hand and to follow the right processes. We recommend keeping this story handy (you can access it for free online or get the *Premier Guitar* app for Android or iPhone) so you can follow the steps outlined here precisely every time.

Hopefully your amp woes never become so great that these fixes don't solve the problem, but if they do, be sure to document the problem well and get in touch with a qualified amp-repair person so they can help you get up and wailing again with minimal downtime.

Lita Ford

Photo: Neal Preston



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NEW YORK AMP SHOW 2012

The go-to Eastern show for boutique-amp aficionados goes to a new, more convenient locale and sees several companies serving up cool new offerings.

STORY AND PHOTOS BY JOE CHARUPAKORN

For the last few years, Loni Specter's New York Amp Show has been one of the best spots for guitar nuts in the East to check out a wide assortment of boutique amp unveilings in a single location. Previously, the ambitiously named event has been held at a less-than-cosmopolitan corporate park in Piscataway, New Jersey, but for the 2012 show held June 2–3, Spector moved the amp extravaganza to the Embassy Suites Hotel in Secaucus, New Jersey—a lot closer to the city (four miles to be exact).

While not quite as chic as, say, the Gansevoort Hotel in Manhattan's Meatpacking District, the new venue was a lot more accessible and accommodating than the previous one: There's a Starbucks within walking distance (as opposed to the half-hour drive for a decent cup of Joe in Piscataway), and that's the spot where a group of bleary-eyed, gigbag-carrying amp-o-holics eagerly convened about an hour before the show opened. It was there that a loquacious fellow kept me entertained with gushing tales of the Ark amp he remembered from a previous show.

To his chagrin, however, Ark wasn't there this year. As with each New York Amp Show, some vendors returned while others were MIA. But though this year's show was noticeably quieter than previous outings, there was still a vibrant cast of fresh faces, upstarts, and veteran builders, all proudly displaying their wares—everything from Dumble clones to new takes on Marshall, Vox, and Fender recipes, and battery-powered all-tube amps. Following are some of the show's highlights.

GOODSELL DICKIEBYRDS

Richard Goodsell's new Dickiebyrd line (a typically tongue-in-cheek nod to his first name and middle name) debuted at the New York Amp Show. The flagship Thunderball ($999 street) is inspired by the Supro Thunderbolt but can run any power tube or rectifier.
superseventeen.com

CAROL-ANN TRIP-R

Carol-Ann Amps' new 3-channel Trip-R (approx. $2,800 street) features the same tonal mojo as the company's Triptik model only at lower wattages. The cathode-biased amp pumps out 25 watts with EL34s or 17 watts with 6V6s.
carolannamps.com

EAST AMPLIFICATION NEW YORK MINUTE

The 2-watt New York Minute ($1,550 street) features two 12AT7 power tubes, three 12AX7 preamp tubes, a 5U4 rectifier, and a 10" East Reference speaker.
eastamplification.com

FAR EAST ELECTRIC FUJIYAMA

Coming all the way from the Land of the Rising Sun, Far East Electric brought a prototype of the 20-watt Fujiyama to Secaucus. It features a solid-state preamp and a tube power amp.

FUCHS CASINO AND PLUSH-CONDUCTOR 1 ATTENUATOR

The new, more-affordable Casino line features four amps—ranging from the low-wattage, 6SN7-powered Four Aces to the 50-watt, 6L6-powered Full House 50 ($1,900 street). All feature two channels and the digital reverb circuitry from Fuchs' Verbrator pedal.
fuchsaudiotechnology.com

The Plush-Conductor 1 ($349 list) enables you to continually adjust amps of less than 100 watts down to milliwatts, and features a speaker-simulated recording output. Photo by Debra Muller

HOVERCRAFT ANDROMEDA 20

The 20-watt Andromeda 20 ($550 street) is powered by a pair of EL84s and can be paired with a matching vertical 2x12 ($250 street) stocked with Eminence speakers.
hovercraftamps.com

HAMILTONE AUSTIN OVERDRIVE

The 100-watt Austin Overdrive ($4,250 street) has two channels powered by four 6L6 Tung-Sols, and has a half-power switch for more manageability.
hamiltone.com

SATELLITE AMPS PORT-A-WATTY

Adam Grimm holds a prototype of the 3-pound, 12-watt, all-tube Port-a-Watty ($750 street). The production model will be a combo equipped with a 12" Celestion Neo speaker, and it will offer five hours of battery-powered playing time (it will also accept AC power).
satelliteamps.com

INDIGO MCD

The 40-watt McD ($3,095 street) features 6L6 power tubes, two channels, and a 12" Jensen Tornado. A head-only version goes for $2,795.
indigoamps.com

SATELLITE HELLION

Satellite also brought the ultra decked-out, 25-watt Hellion, which features watercolor artwork by Chicago-based artist Eric Sorensen, as well as a pair of 5881 power tubes, two 12AX7s in the preamp, and a 5Y3 rectifier. Grimm auctioned the amp on eBay and donated all proceeds to the San Francisco Rock Project, a nonprofit music-education program for youth.
satelliteamps.com

MILBERT GAGA-90

The 12-pound, all-tube GAGA-90 ($3,750 street) is so light that artist Dave Diamond can jam while lifting the amp. This diminutive amp can use up to four power tubes of more than 30 types—and in various combinations—and is "blow proof."
milbert.com

LONGHORN TEXAS TRU TONE

The 50-watt Texas Tru Tone ($2,995 street) is a 6L6-powered, single-channel amp with a Dumble-inspired voicing, optional 5AR4 rectifier, and power-tube bias test points and pot.
longhornamps.com

SUHR SL68

The 100-watt SL68 Hand Wired ($3,995 street) features two EL34-driven channels, a rear-panel master volume, and a low-power switch designed to yield Variac-style distortion of the "brown" EVH variety.
suhrguitars.com

MOXIE ROCK 15

The 15-watt Rock 15 ($1,399 street) is driven by two EL84s and features gain, tone, and volume controls, as well as a 12" alnico Jensen Jet Blackbird speaker.
moxieamps.com

JIM KELLEY REISSUE

Thanks to the folks at Suhr, you can now get in on a reissue of the Jim Kelley single-channel amp ($3,995 street) originally produced from 1978 to 1985. The limited run of 50 amps comes with a power attenuator and maple cabinet.
jimkelleyamplifiers.com

TAURUS AMPLIFICATION STOMP HEAD 4.SL

Sharing a suite with Phil Jones bass amps, Taurus displayed the hybrid tube/transistor Taurus ($899 street), a 2-channel, floor-based amp that can run at 70 or 40 watts and weighs less than 7 pounds.
taurus-amp.pl

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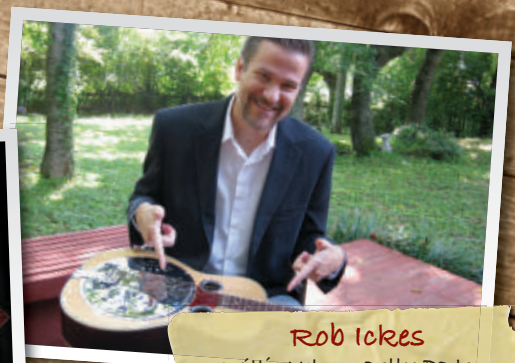

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Danny Flowers
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Martina McBride, Dwight Yoakam, Diamond Rio, Rod Stewart

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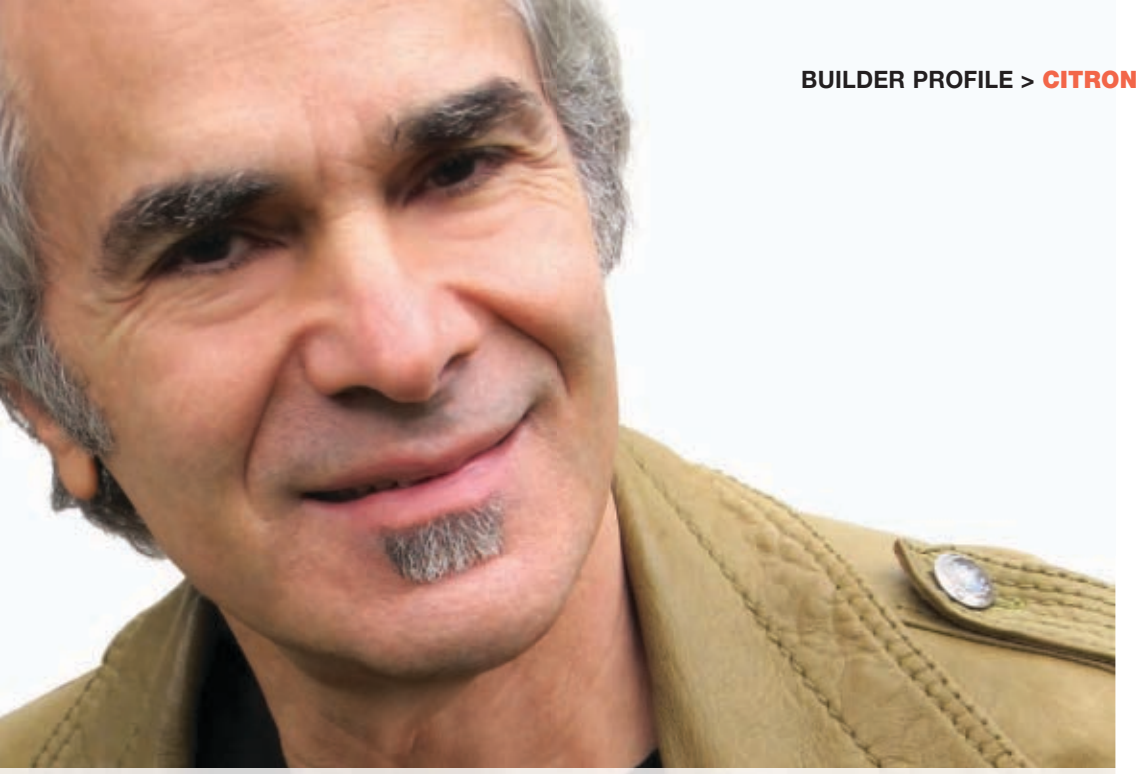


Citron

GUITARS AND BASSES

BY RICH OSWEILER

Combining his passions for music and design, guitarist and architect Harvey Citron creates his distinctive hollowbody basses and guitars that incorporate his own custom-built pickups, as well as his most groundbreaking invention to date—an intonation-adjustable wooden bridge.

Photo by Janet Perr

Working out of a one-man workshop in Woodstock, New York, Harvey Citron has been a respected member of the boutique luthier community for close to 40 years. Though best known for his hollowbody basses, Citron's distinctively hand-crafted instruments include solidbody basses, as well as a variety of guitars and baritones that have drawn the attention of artists across the genre spectrum, from Steve Swallow to John Sebastian to Doug Wimbish, among others.

With a background as both a guitarist and an architect, Citron is able to draw on his passion for both music and design when creating his absolutely unique offering of instruments. Aesthetically unique, yes. But he is also part of a very small group of guitar craftsmen with expertise in making their own pickups, and he winds, voices, and positions each one to complement the individual instrument. A true innovator, Citron's distinctive, piezo-loaded *and* intonation-adjustable wooden bridge defines the combination of science and art.

Citron got his start as a luthier in 1974. Co-founding a partnership with Joe Veillette the following year, Veillette-Citron had an eight-year run during which a few hundred hand-crafted guitars were produced. But eventually, Citron felt like a factory worker in his own business, putting in too many hours just to pay the bills. A desire to return to designing his instruments led him to set up shop as an independent luthier.

Premier Guitar recently caught up with Citron as he prepared to exhibit at the 2012 Montreal Guitar Show. Here he discusses his background and building philosophies, gives insights into modern lutherie trends, and even shares his thoughts on building a traditional acoustic guitar.

As a working musician and former architect, which of the two was the biggest inspiration for your getting into building guitars?

It's actually very hard to separate the two. I grew up being interested in tools, working with my hands, building things since I was very little, playing guitar by age 11, and loving music completely. I attended Brooklyn Technical High School where I studied drafting and engineering, and then studied architectural design at City College School of Architecture. I was incredibly frustrated as I started out working as an architect, since I was not really doing anything more than producing working drawings of others' designs. I was very young, but had a fire burning inside to create. I *was* creating through my music—and my furniture and interior design—but not through my job. Then the opportunity came to build a guitar. Because of all my years drafting and studying design, I knew I could look at a guitar, understand how it was built, and could actually build it! I could explore to my heart's content. So what better avenue for a musician *and* a designer? I was able to meld these two areas of creativity that I loved.

Which has had the biggest influence on your work?

Again, it's very hard to say which has been the larger influence. As a designer, I have always been seeking out what hasn't been done yet, or to solve a problem. Each of my instrument models sets about creating something new sonically and/or physically—they are not just pretty boutique instruments. Because I am a designer, I can play with woods, construction, electronics, and shapes. Because I am a musician, I can use those elements to explore new tone.

What were your formative influences insofar as guitarists, bands, and instruments?

I started playing guitar in the 1950s at a very early age and was listening to people like Elvis Presley and Chuck Berry. But I only had an acoustic guitar at the time. We were poor and my mom bought the cheapest Martin you could buy—a 00-17 with a mahogany top and no binding. I did everything with that guitar and amplified it with a DeArmond pickup and an Ampeg Rocket amplifier. Even later on, I was using that same guitar for soul music. Developing my own style back then, I was pretty much a rhythm guitar player for a long time, but later on became a lead player, too.

Eventually you began building basses as well. Was your attraction to the rhythm side of playing part of the reason for that?

I just love instruments and playing. Building basses for me was always part of the deal from the beginning somehow. Veillette-Citron's first prototypes were a 6-string neck-through electric guitar and 4-string neck-through electric bass. Our first batch of instruments was also mixed, and I'm sure we built more basses than guitars over the years our company existed from 1975 to 1983. With the exception of Alembic, bass design had not really been explored that extensively in the mid-'70s. While in

Built for renowned jazz bassist Steve Swallow, Harvey Citron's AE5 Swallow bass is an acoustic/electric 5-string with a 36" scale length using Honduras mahogany for the body and neck, spruce for the top, and rosewood for the fretboard and bridge.

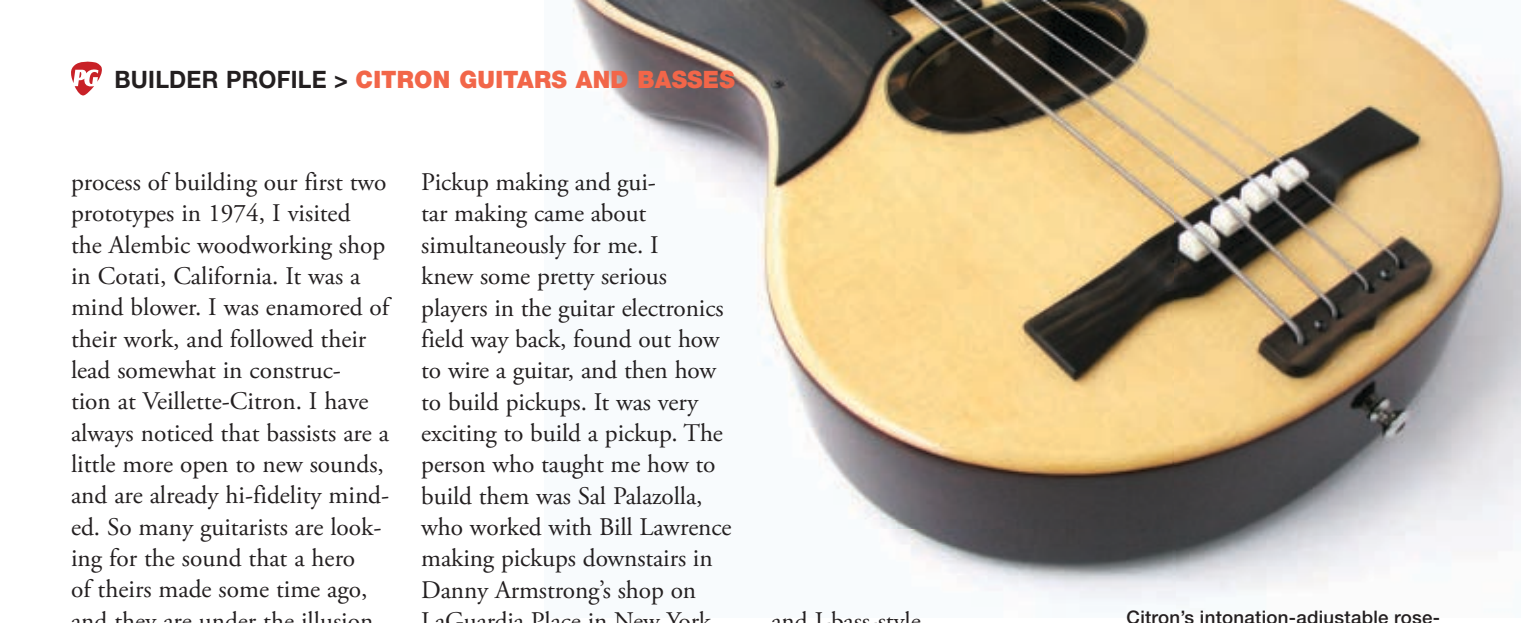
process of building our first two prototypes in 1974, I visited the Alembic woodworking shop in Cotati, California. It was a mind blower. I was enamored of their work, and followed their lead somewhat in construction at Veillette-Citron. I have always noticed that bassists are a little more open to new sounds, and are already hi-fidelity minded. So many guitarists are looking for the sound that a hero of theirs made some time ago, and they are under the illusion that it if they have the same equipment, they can recreate that tone. I never had the desire to build what has been made before. It also seemed like there were more orders for basses.

Why is that?

It's always been my impression that there are far fewer bassists than guitarists. Therefore, the chances of a bassist working are much higher than that of a guitarist. And the quality of the bassist doesn't even have to be as good necessarily, because you need them and there aren't that many around. [*Laughs.*]

Can you tell us about your pickups and how you got started making them? Was it a matter of wanting to be involved in all components of building? Was it out of necessity or just an interest in electronics?

Pickup making and guitar making came about simultaneously for me. I knew some pretty serious players in the guitar electronics field way back, found out how to wire a guitar, and then how to build pickups. It was very exciting to build a pickup. The person who taught me how to build them was Sal Palazolla, who worked with Bill Lawrence making pickups downstairs in Danny Armstrong's shop on LaGuardia Place in New York City. This was in 1974. The first guitar I built had some pretty strange pickups, and people started asking me to modify their guitars with my pickups and different switching arrangements. Veillette-Citron started building prototypes in late 1975 and those instruments included my humbucking pickups. We liked the idea of having a part in virtually every piece of the instrument, from making our own pickups to the bridge hardware and strap pins. Though when I started Citron Guitars and Basses in 1994, I had no desire to build my own pickups, except for one very unique single-coil that I began to make for some models. As time went on, I felt that my pickups would make my instruments more unique, so I currently build several kinds of single-coil guitar pickups, guitar humbuckers, bass humbuckers, and J-bass-style pickups. They are extremely popular and are, in fact, used in other luthier's instruments.



Citron's intonation-adjustable rosewood bridge on the AE4 Swallow features bone saddles and six EMG under-saddle piezos.

What makes your pickups unique?

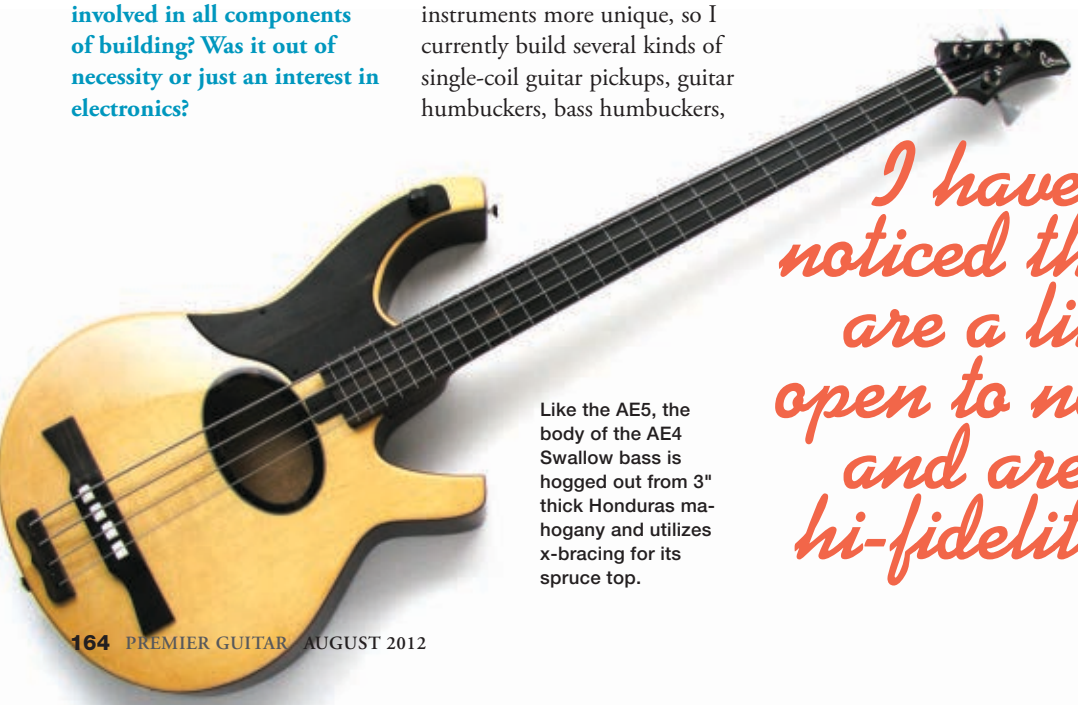
One of the unique aspects of my pickups is the multiple gauges of wire in each pickup using my own recipe. Each gauge of wire has its own intrinsic tone and I call my pickups "custom blended." I also voice each pickup for its placement. Pickups closer to the neck require less resistance as there is so much string excursion. Pickups closer to the bridge require more resistance since there is so much less string movement in that position.

What do you consider to be one of the coolest or most important advances you've made with Citron Guitars and Basses?

The greatest and coolest thing I've done has been the development of my hollow instruments. They are unique in construction, electronics, and most importantly, in their tone. They are huge sounding, spatial, deep, and possess incredible sustain.

Can you walk us through the evolution of your hollowbody instruments? What was your "I gotta do this" moment, and how long did it take to get there?

My inspiration actually had a lot to do with the *Unplugged* show on MTV and having a



Like the AE5, the body of the AE4 Swallow bass is hogged out from 3" thick Honduras mahogany and utilizes x-bracing for its spruce top.

I have always noticed that bassists are a little more open to new sounds, and are already hi-fidelity minded.

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LEFT: 5-string bass pickups- the coils have been wound, and the pickups put together with their magnets, just before being placed in fully shielded covers and potted in epoxy. **CENTER:** Pickup coil being wound. Photo by Janet Perr **RIGHT:** The interior of an AE5 Swallow bass.

number of different instruments in my hands. I had this idea that I was going to have a hollow bass, and initially, I thought I was going to bend the sides on it and have to make it headless so it wouldn't be neck heavy. As it turned out, I ended up deciding to hog out a piece of mahogany for the bodies instead, but the first three or four *were* headless. I then came up with an intonation-adjustable wooden bridge using saddles with brass shims. With it, you could move the saddles but it would still actually react sonically like a wooden bridge with bone saddle. But this didn't allow me to use any traditional piezo elements, so I was using an undertop transducer. It sounded okay, but it fedback a lot. Additionally, by building the headless instruments, I realized I was limited with the hardware, string spacings, and nut width. The body was actually heavy enough that I didn't need it to be headless, so I moved to putting the head back on the instrument.

So here I am, going back to a traditional piezo. I called up an old friend who's a well-known specialist in the field

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LEFT: A top being glued on to an AE series bass. **RIGHT:** Harvey sanding one-piece Honduran mahogany AE5 Swallow necks. Photo by Janet Perr

and told him I wanted to build an intonation-adjustable wooden bridge with piezos in it. He told me: "It can't be done and no one cares." [*Laughs*.] He knows a lot about this stuff but I wasn't willing to just put a single 1/8" bone saddle in the bridge. I made the saddle 5/16" and made the whole bridge able to move with the piezo in it. That was the least I could do as far as I was concerned, and I left it at that for a while.

Since this model's inception, I had been thinking this bass was going to be great for Steve Swallow. Steve tried the one with the 5/16" bone saddle, loved the sound of it, said he had to have it, and that he's always wanted a wooden bridge with piezo. But he *also* said that an intonation-adjustable bridge would be a great plus if I could do it, because he's such a nut about intonation. For some reason or other, that was all the impetus I needed to get this new bridge together. And it was then I realized how close I was to making it work. The idea came to me that if I considered my 5/16" saddle a *sub-saddle*, I could put moving parts (bone saddles) on top of it with piezo

underneath. This led to my first intonation-adjustable bridge and it had a single piezo under the leading edge of what I call the sub-saddle (made from ebony). I put slots in it and made bone saddles with little pins in them so the saddle could slide.

There have been improvements since then—the sub-saddle is now 3/4" deep and the saddle pins have been replaced with brass tabs. Also, the underside of the sub-saddle is segmented so each string acts as if it has its own individual support. This provides less likelihood of problems with warpage of the sub-saddle, which would cause uneven string pressure.

Is there a particular current or recent trend in lutherie that you see going away in 15-20 years and is there one particular current or recent trend in lutherie that you see having a major effect on guitar makers in 15-20 years?

The unsustainability of many of the beautiful hardwoods is an ongoing problem in the guitar business. I use Honduras mahogany for my hollow instruments, and also for the necks of other models. Honduras mahogany is the material that has been used primarily and traditionally for acoustic guitar bodies and necks. It's very stable, machines easily, and has a wonderful tone that's sweet, warm, crisp, and delicious. It has become harder and harder to obtain, and the quality I see has been going down. The trees that are being harvested are much younger, and who knows how long the supply will last. I think guitar makers are going to have to start using other woods. I have been resisting the change, but I expect it is inevitable.

In your 40 years of building, what is one of the most important advances you've seen in lutherie or guitar manufacturing?

I think one of the most important advances in guitar manufacturing is the widespread use of CNC machines. These machines make reproduction very accurate and time efficient. Also, polyester finishes are great because they are extremely durable, as opposed to nitrocellulose lacquer and acrylic urethanes.

Do you utilize CNC?

No.

A number of boutique luthiers are hesitant about using CNC, feeling that it may take away from the handcrafted aspect of a build. Is that your reasoning as well?

I'm open to having someone else do particular things for me on CNC and I don't see any shortcoming in that. The problem for me is that I'm a small builder. For instance, I'm building a batch of five basses right now—two of them are 34" scale, one is a 35" scale, one is a 36" scale, and the other is a prototype for Steve Swallow. They're all different, both internally and externally. How would I pay for the tooling when the whole mechanism of CNC is geared towards production? That's the only thing that's held me back as far as that's concerned.

There is one part of my hollowbody that is incredibly painstaking and there's no advantage to how I do it. It's just the only way I can, shy of using CNC. Imagine a hollowbody instrument that's been hogged out a 3" piece of mahogany that has a waist cut. Trying to make that material on the inside parallel is a handcarving job for me. It's time consuming, it's not fun, and it's not necessarily better. It's just the way I have to do it [*laughs*]. That's okay, I can do it, but CNC would be great for something like this.

An AE5 Swallow bass after it has been shaped on the pin router. "This one features Steve Swallow's very narrow neck—it might be the last body I made for Steve," says Citron. Photo by Janet Perr

What's the ratio of guitars to basses that you build? Is it market driven or do you build what's inspiring you at the time?

Except for a prototype that I'm currently building for Steve Swallow, everything is order driven. As far as the ratio, it's almost all basses right now. What I'm most known for are my hollow basses and they require a lot of time to build. Steve Swallow is out there playing them, and while his audience may be small, they are loyal. People have been wanting those instruments—either what he plays, or what he plays modified to be a hybrid between his bass and my regular A-series basses.

How many instruments do you produce in a year and how can people find out more about them?

My website has beautiful, detailed photos of all of my models, as well as a price list, photos of the shop, upcoming events, and videos. Many of the guitars and basses I build are customized to the preferences of each musician. I will often change the string spacing at the bridge, the neck dimensions, and tweak the electronics, among other things to suit my customer's needs. I generally build between 12 and 20 instruments per year with the Swallow bass being my most popular model.

Given your expertise with hollowbody instruments, have you ever had the desire to build a traditional acoustic guitar?

Yes, yes I do [*laughs*]. I've been thinking about it for a long time. But as you get older, I think life gets busier somehow and the opportunities for messing around get harder to squeeze in. What I need to do is learn more before I do it. Unlike many other builders, all this stuff has never really been about the craft of building for me. The craft is my vehicle to hear what I imagine. For some reason, I don't really have the desire to build a Martin guitar. That said, my favorites are the Martin D-35s from the '60s, the dreadnought Guilds of that period, and the huge Gibsons. But I feel that before I build an acoustic guitar, I want to *really* understand what made those guitars sound the way they do.

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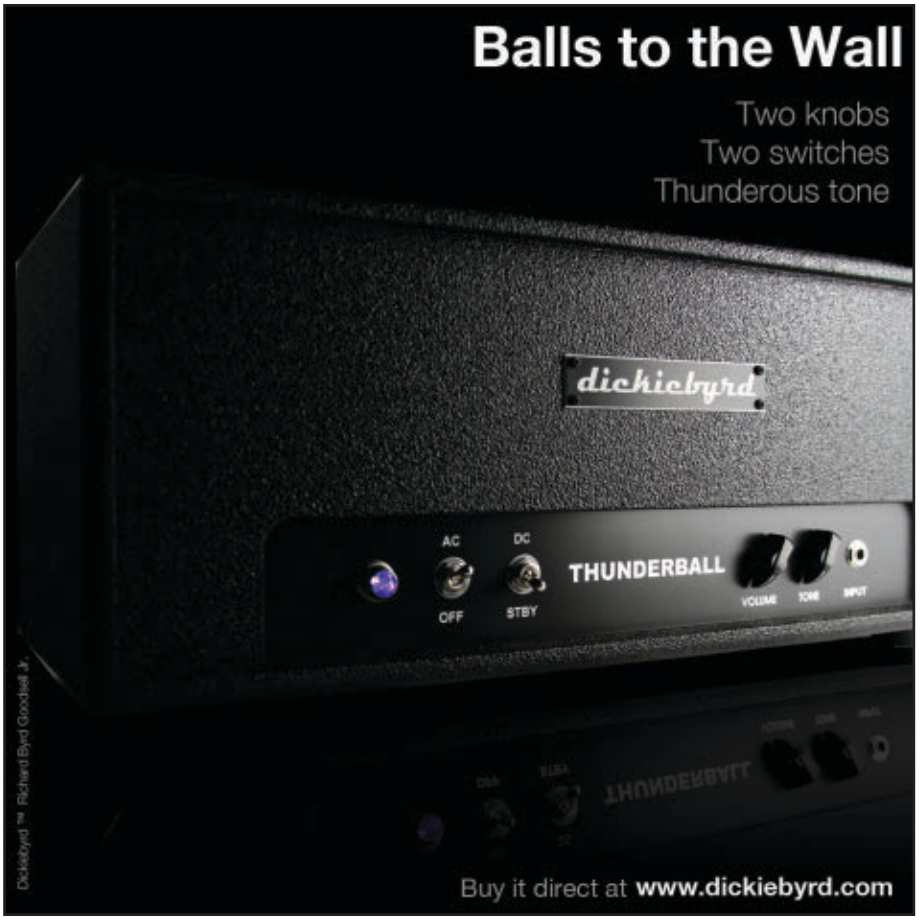
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STUDIO LEGENDS

[Recording Insights from Iconic Engineers]

KEN SCOTT

ON RECORDING BOWIE TO BECK

BY MITCH GALLAGHER

It almost sounds like a feel-good Hollywood movie: A young man gets hired by Abbey Road Studios at age 16. After moving up through the ranks, his first session as an assistant engineer is *A Hard Day's Night* by an English group known as The Beatles. That same young man's debut session as first engineer is *Magical Mystery Tour*. He then works on the *White Album* and subsequently goes on to record seminal albums with the biggest artists from the '60s, '70s, '80s, and beyond—Jeff Beck, Dixie Dregs, Supertramp, Elton John, Missing Persons, John Lennon, George Harrison, The Tubes, Stanley Clarke, Mahavishnu Orchestra, Pink Floyd, Devo, Lou Reed, Kansas, Billy Cobham, David Bowie, and many, many more. Definitely a dream career, yet also the true-life story of record producer/recording engineer, Ken Scott.

Along the way, Scott worked with a who's who of guitarists: Beck, Steve Morse, John McLaughlin, Tommy Bolin, Mick Ronson, David Gilmour, George Harrison, Eric Clapton, just to name a few, as well as legendary drummers (Rod Morgenstein, Ringo Starr, Terry Bozzio), and bass players (Clarke, Andy West, Patrick O'Hearn). Along the way he earned a CLIO Award for recording "I'd Like to Buy the World a Coke" and two Grammy nominations, but has yet to win a Grammy.

Scott remains a vital force in the industry today, recording and producing, as well as releasing a virtual drum library, *Epik Drums—A Ken Scott Collection*, featuring five stellar drummers from his past, as well as *Epik Drums EDU*, a DVD set documenting his approach to recording and mixing drums. His latest effort is his just-released autobiography, *Abbey Road to Ziggy Stardust*. Ken generously gave *Premier Guitar* an extended interview in the middle of a long day of book promotion, discussing how he approaches making music as a producer, and, of course, his approach to recording all those killer guitarists.

Producer Ken Scott works hard at the mixing board circa 1968 while working on the Beatles' *White Album at Abbey Road Studios*. Photo courtesy of Ken Scott

You actually started your career at Abbey Road Studios at age 16?
That is absolutely correct, yeah.

How did you land that job?
Someone upstairs was looking after me! I got fed up with school. One Friday evening I wrote letters to about 10 places. All those letters were mailed on Saturday; I heard back from EMI [parent company of Abbey Road] on Tuesday, had an interview on Wednesday, and was accepted on Friday. I left school that day and started at Abbey Road the following Monday. Like I say, someone upstairs was looking after me. [*Laughs*.]

What was your first job there?
Tape library—just getting tapes, checking in tapes, and making sure they were in the right cutting room or studio.

How did you move from that into the engineering side of things?
Via second [assistant] engineering, doing that for a few years. My very first session as a second engineer was on side two of *A Hard Day's Night* and I carried on with them [The Beatles] all the way through to *Rubber Soul*. Then I was promoted to mastering—disc cutting. EMI felt it was

SUGGESTED LISTENING

Here's a small sampling of the many albums that producer/engineer Ken Scott has worked on. His output covers an amazing range of musical styles and genres.

Jeff Beck
Truth,
There and Back

David Bowie (Mick Ronson, guitar)
Hunky Dory, The Rise and Fall of Ziggy Stardust and the Spiders from Mars, Alladin Sane

Mahavishnu Orchestra (John McLaughlin, guitar)
Birds of Fire,
Emerald Visions of the Pure Beyond

George Harrison (Harrison and Eric Clapton, guitar)
All Things Must Pass

Devo
Duty Now for the Future

Billy Cobham (Tommy Bolin, guitar)
Spectrum

The Beatles
Magical Mystery Tour,
White Album

Supertramp
Crime of the Century,
Crisis, What Crisis?

Lou Reed
Transformer

Missing Persons
Spring Session M

Elton John
Madman Across the Water,
Honky Chateau

Stanley Clarke (Jeff Beck, guitar on two cuts)
Journey to Love,
School Days

Procol Harum
Salty Dog

Dixie Dregs (Steve Morse, guitar)
What If, Night of the Living Dregs

Dada
Puzzle

Gamma (Ronnie Montrose, guitar)
Gamma 1

better to learn the final product before you worked on the "easy" side of it. So you could never become an engineer without knowing the problems that may ensue if you don't give the cutter a good tape. After doing that for a few years, I got the phone call to move downstairs as an engineer. After sitting next to one of the other engineers for two weeks—just watching what was going on—I got to push up the faders on my very own first session, which happened to be *Magical Mystery Tour*.

Working with The Beatles had to be tremendously exciting.
Are you kidding? They were the biggest band in the world at that moment in time. Nothing bigger … it was terrifying! To put it bluntly, I was shitting myself the entire session. [*Laughs*.]

Obviously it worked out okay.
Well, they'd been to an outside studio and recorded a version of "Your Mother Should Know," and Paul wanted to try a new arrangement on it. So we were re-recording "Your Mother Should Know." The arrangement didn't work, so luckily anything I did mess up, it didn't matter anyway.

Working with them as a training engineer was incredible because you couldn't really do too much wrong with The Beatles. You had the perfect set up for experimenting to find mics you liked. It wasn't a typical three-hour session where you had an orchestra and you had to do two songs in a three-hour session—where you had the pressure, so you had to get it right from the get-go. With The Beatles, they were spending ages. They loved experimentation, so that gave you the freedom to try things. And also, if I wanted to try mic X on piano, which no one ever used, and I wanted to try it in a totally different place from anywhere other people mic the piano, and I pulled up the fader and it sounded like crap—nothing like a piano—The Beatles would turn around and say, "Wow, that doesn't sound anything like a piano, we love it, keep it!" They didn't want things to sound normal, so it was a perfect learning experience for me.

Why did you become a producer?
It was a combination of two things: Engineering was becoming too easy. I'd almost reached the point where I'd seen

some of the other engineers at Abbey Road, where they could literally set up the board, all of the EQ and everything on the mics before the musicians even came in or they pulled up faders. You get into habits of how you record things, what works for you. I was reaching that point.

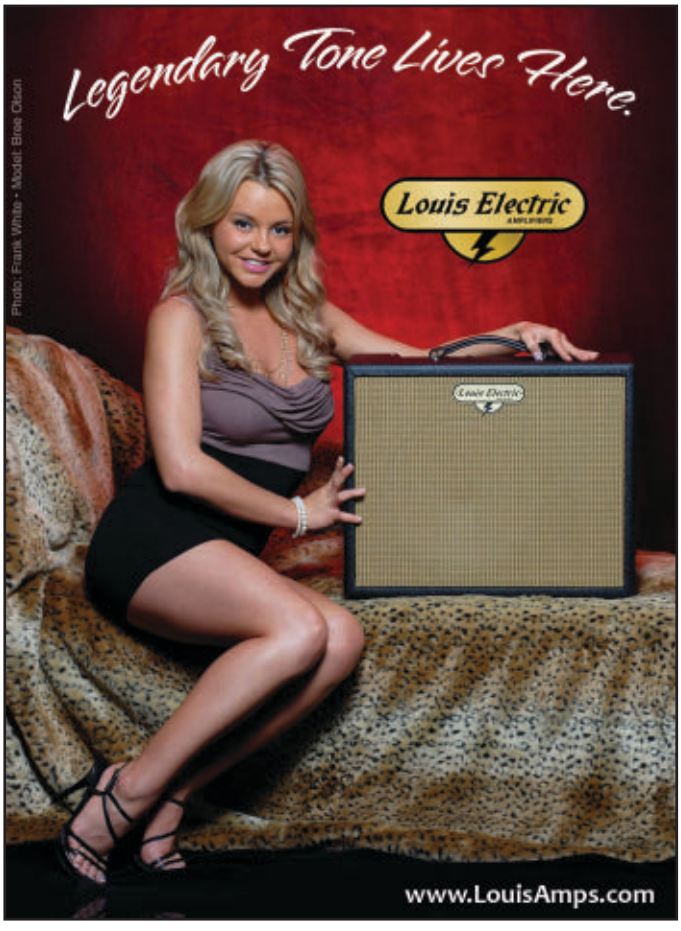
There was that, plus something that a lot of engineers eventually go through … you'll be sitting there next to the producer and suddenly you'll have this idea. You tell the producer. He looks at you and pushes the talkback button and tells the artist, "You know what, we're going to try this." And the artist says, "Yeah, okay." Then, if it works, the producer takes the credit. If it doesn't work, "Oh well, that was only Ken's idea anyway. I didn't think it would work, but I thought I'd give him a chance."

That was happening more and more. I wanted more artistic say.

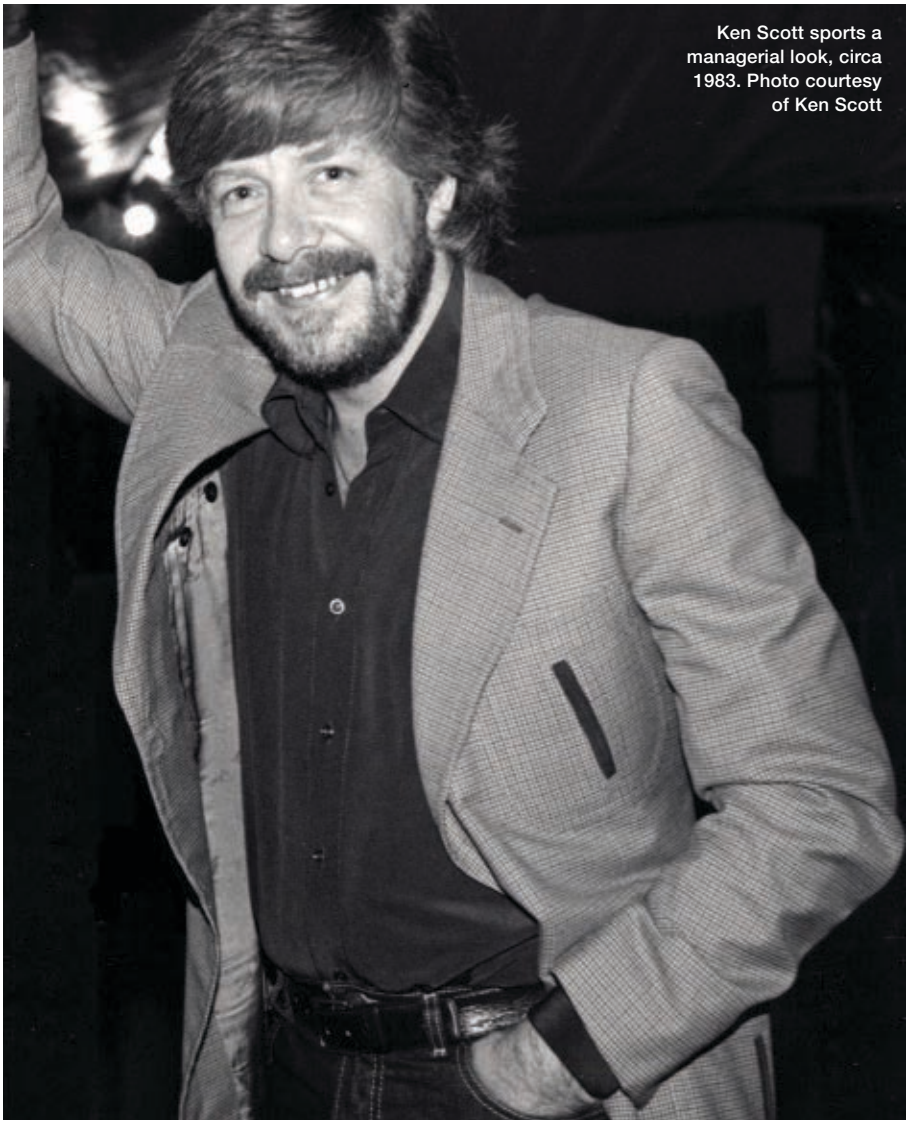
What is the difference between an engineer and a producer?

If you look at it from the film sense, the recording engineer is the director of

Ken Scott cutting acetate in the studio. Photo courtesy of EMI Archives



There are a lot of producers out there that go in, "It's my way or the highway" kind of thing, and they finish up with it being more of the producer's record than it is the artist's.



Ken Scott sports a managerial look, circa 1983. Photo courtesy of Ken Scott

photography and the record producer is the director. [The producer is] there to pull the performances out of the artists. They're there to help with the arrangements. The producer can be a shrink, he can be a dictator, he can be your BFF. He has to be a million different things. But ultimately, the way I look at my gig, it's to get the best performance out of the artist in the way the artist wants it put across. There are a lot of producers out there that go in, "It's my way or the highway" kind of thing, and they finish up with it being more of the producer's record than it is the artist's.

Do you go into a project with an end in mind? Do you know what it will sound like before you even start?

To a point. Not wholly. I don't like to do too much pre-production. I've found that if you go in with a set idea of how something has to be, something can change in the studio. You do the song fractionally faster or the sound is slightly different from when you were in pre-production, and a guitar part suddenly won't work. If you're fixated on that guitar part or whatever it is, you're going to waste a lot of time trying to get back exactly what you had in pre-production—and it might never work. So as long as the basic arrangement is there going into the studio, that's it for me. I have a certain idea of what it's going to be like … it's probably 50/50. I know 50 percent of what we're heading for, but leave the other 50 percent up for grabs once we're in the studio.

Was that the same when you were working with the Dixie Dregs? Steve Morse composed all the parts in advance, did he not?

Yeah, it was the same with the Dregs. The first time I ever met them was in pre-production. I walk in and they play their first song, one called "Take It off the Top," and I stopped them in the middle and immediately laid into the drummer [Rod Morgenstein]. [*Laughs.*] He was just overplaying so much, it was a constant battle between him and everyone else. Steve was trying to get as many notes in as possible, the bass player was trying to get as many notes in as possible, and Rod was trying to get as many hits in as possible. We took small sections of the song, and I just had him pare it way down. He hated me. It's a great story between us, because he absolutely detested me at that point because I was stopping him from showing off. But once he heard it starting to come together in the studio, more as the song as opposed to their individual pieces, then he suddenly realized what I was getting at. He re-thought all of his drum parts. He now says that thanks to what I did that day, he still has a career.

I knew a little bit more about what had to happen—more than they did—right from that get-go. Once we'd laid down the basic tracks, then it was overdubbing. With Steve's guitar, it was so sectionalized. One of the things that I loved working on with Supertramp was using as many different guitar sounds as we could get, and that's what we did with Steve. It was, "Okay, we'll take this verse … this part

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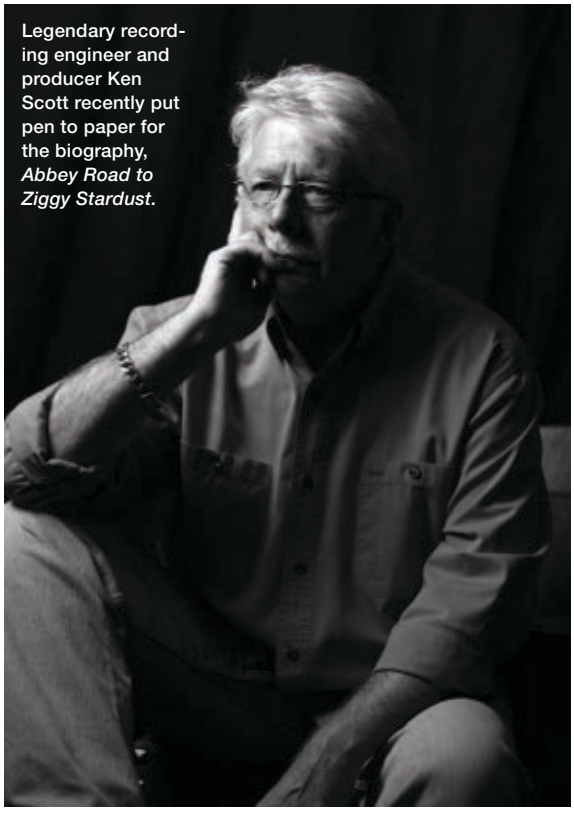
KEN SCOTT'S TOP RECORDING TIPS

Here's a short list of Scott's own tried-and-true guidelines for making better recordings:

1 Make decisions as you record. Don't wait until mixdown. According to Scott, "No one likes to make a decision, and it's not just in music—it's in life it seems. Everyone is second-guessing themselves. How many times have you been to the supermarket and you'll walk past a guy with a cell phone to his ear: 'Yes, honey, I know, but there are 10 different kinds of baked beans. Which kind is it I'm supposed to get?' It's just baked beans, come on. So you make a mistake, she's not going to kill you for it. Make a bloody decision!"

2 Listen to many different musical genres and try to learn as much as possible from each. Don't be afraid to experiment. It's nice to have a total picture of where you are headed, but leave the final destination open to improv and creative discretion.

3 Your idea of sound should be constantly changing. "That's how you grow," Scott says. "A band like The Beatles, they were changing constantly. As they learned more and more, they would make things change. They would take the audience with them, and that's how they managed to come up with such incredible stuff—they were always learning and they always wanted something to be different."



Legendary recording engineer and producer Ken Scott recently put pen to paper for the biography, *Abbey Road to Ziggy Stardust.*

4 Make recordings with the gear you have. Great recordings can be made with any level of equipment if the sources and performances are great.

5 Invest in good monitors and learn how they sound. Everything starts with being able to hear your tracks accurately.

6 Play out live as much as possible and learn from the audiences' response to your performance. You're bound to benefit from being exposed to other perspectives.

7 Pare down performances to the essentials. Focus on making the best song, don't fixate on the individual parts to the point of losing the forest for the trees.

8 Go into recording sessions with an end in mind. Don't worry about having every detail mapped out, but a good arrangement and a vision for the final result will make for a much more productive and successful session.

should be this kind of sound, this part should be this kind of sound." We'd zero in on the sound, he'd play those parts, we'd double them or whatever, then we'd get the sound for the next part, and just patch it together like that. So, exactly what should the sounds be? I didn't know up front. We had to find them.

It sounds like you need a well-developed sense of psychology to work as a producer. How do you read the musicians and know how to handle them?

I have no idea! Take my history with Jeff Beck. The first time I worked with Jeff, it was to record the first Jeff Beck album, *Truth*. It was a bunch of guys who weren't really known. Jeff had a bit of a reputation from the Yardbirds, but certainly nowhere near as big as Clapton was coming out of that band. Little-known, generally regular guys—they were a blast. They were really fun to work with and they were really good, obviously.

Then we complete the project. Album comes out, they tour the States, they come back to start on the next album. And the egos were through the roof! We couldn't work together, it was obvious. I think we did one day and that was it—sessions got canceled because it just wasn't working.

I don't see Jeff for a while until I start to work with Stanley Clarke. Jeff comes in and plays on a couple of tracks on Stan's albums, and he's back to normal again—he's a regular guy. It was really nice working with him again. No sign of that ego. Then I get to work with him again later on *There and Back*. It was the exact opposite of everything! He didn't feel he was good enough to be playing with those musicians. On this occasion, I had to try and draw his performances out of him. I was sort of stroking his ego the whole time, "Jeff, you *can* do it, come on mate, this is easy for you." That was very hard. I hadn't had to deal with that before. That was a learning experience for me, trying to pull something out of an artist they didn't think they were capable of. Generally, they go over the top. It's easier to pare it down than it is to get it out of them.

You've done pop, glam, fusion, blues, rock, new wave—all sorts of different things. What drives you to work in new musical styles?

I get bored. I used to drive my managers crazy. Because they were getting a percentage, they would like to book you up as an engineer/producer for the next two, three years, and know exactly what you're doing. I could never do that, I had to wait until I finished a project and then say, "Okay, bring me stuff." Stuff would come in, "No, no, I just did something like that." It was just trying to find something I felt like doing. Although, the weird thing is, I am a total creature of habit. Recording drums, I can literally set up the EQ before the kit is even in there. With guitars, I always mic exactly the same way. But musically, as a producer, I need it to be different every time.

What is your approach to mic'ing an electric guitar?
A Neumann U 87 about 18" away and whatever you want for a distant mic.

How far away is the distant mic?
No specific distance.

Do you "tune" the placement by ear?
Yes.

Do you aim the close mic at the speaker cone, the center of the speaker, or another spot?
No. Actually, I just put it where it looks right! [*Laughs.*]

Do you fine-tune it from there or just set it and go?
Just set it and go, generally speaking. Obviously, there are times that you try different things. There was a track on the Devo album, *Duty Now for the Future*, where we wanted a very small, distorted sound. We messed around trying to get it, and we finished up taping some headphones to a Neumann U 87. That gave us a really small sound and it was exactly what we were looking for.

So there are times that you modify it, of course. But generally, 90 percent of the time it would just be the U 87, set it in front, and that's it.

Given your approach, it must be essential to get the sound right at the source—at the amp.
It's always from the source, from the performance to the sound. That's one

Recording drums, I can literally set up the EQ before the kit is even in there. With guitars, I always mic exactly the same way. But musically, as a producer, I need it to be different every time.

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of the things with the way we were back in the day. Because we had so little EQ, so few effects, the sound had to start in the studio. I'm a firm proponent of the performance has to come from the studio. It really annoys me, all of the stories about someone will do something and it's, "Yeah, that's okay, we can just put it all together in the computer." No, get them to bloody sing it right in the first place! Don't use Auto-Tune, don't move everything around so it's on the grid. You've got to get the performance. That's the thing with Bowie's vocals. No, they're not perfect. There are places where they're not quite in tune nor in time. But they're from his heart, they're from his soul. They're performances. That's why, 40 years down the line, we're still talking about them.

SIMPLE IS BETTER

Ken Scott calls himself a "creature of habit" when it comes to recording—he trusts specific techniques and gear. For electric guitar, he relies on a Neumann U 87 microphone, placed 18" in front of the speaker, plus a "distant" mic, placed farther away from the speaker. The type of microphone used for the distant mic isn't critical, though the polar pattern will make a big difference. A cardioid mic will be more directional and pick up less room, a figure-8 mic will capture more room sound, and an omnidirectional mic will capture the most room.

Scott works to get the sound right at the source—at the amplifier—then captures it with his straight-ahead mic'ing techniques.

For acoustic guitar, a single condenser microphone—in Scott's case, an AKG C414—is placed near the body, looking at the soundhole or bridge. The mic is adjusted by ear to find the ideal location.

If you don't have access to these higher-end microphones (a basic Neumann U 87 costs approximately $3,200 and the AKG C414 is around $1,000), try using another large-diaphragm cardioid condenser microphone. During his days recording The Beatles at Abbey Road, Scott often relied on an inexpensive AKG D19C condenser microphone for acoustic guitar, piano, drums, and many other sources. Today there are many large-diaphragm condensers on the market to choose from. Some affordable substitutes include the Behringer C-1 ($44), Samson C01 ($80), AKG Perception 120 ($99), Audio-Technica 2035 ($150), Studio Projects B3 ($160), Shure PG42 ($200), Rode NT1a ($230), and Mojave Audio MA-201 ($695).

AKG C414

Neumann U 87

How much do you feel that preamps and other gear factor into the sound that you get?

From my standpoint, very little. I've worked in so many different studios and they're all different. For me, the most important part of a studio—and the thing that *has* to be right in the studio, there's no two ways about it—is the monitor system. Because if the monitors aren't right, then you have no idea what you're doing. You're not listening to the true sound. How do you work with the sound if you don't know that what you're listening to is right?

I put it that way—as being "right"—because we all like to hear things slightly differently. You get to know what you like to hear. You hear that inside the studio and outside the studio. Wherever you listen, you're listening for a particular kind of sound.

How important is the actual recording space that the amplifier or speaker is in?

It's not. You work with what you've got. As far as guitars go, I don't think it makes that much difference. There are times that I'd love to have a guitarist in a big hall so you can get all of that amazing reverb from the distant mic. But generally speaking, it doesn't matter… [*Pauses.*]

I suddenly realized as I'm saying this, to a point I'm wrong! [*Laughs.*] There's an example with Mahavishnu Orchestra where we started recording at Trident [Studios in England], and everything went *great*. This was *Birds of Fire* and we didn't have enough time to do the entire album, so we came over to finish it off in the States. We were booked into Criteria, down in Florida. John [McLaughlin] immediately blew up two 100-watt Marshalls. What it was, the room was so dead. It was that time with the Bee Gees and disco, and the sound was very, very dead. John couldn't get the sound out of his amp without blowing it up. Everything was turned full bore and it

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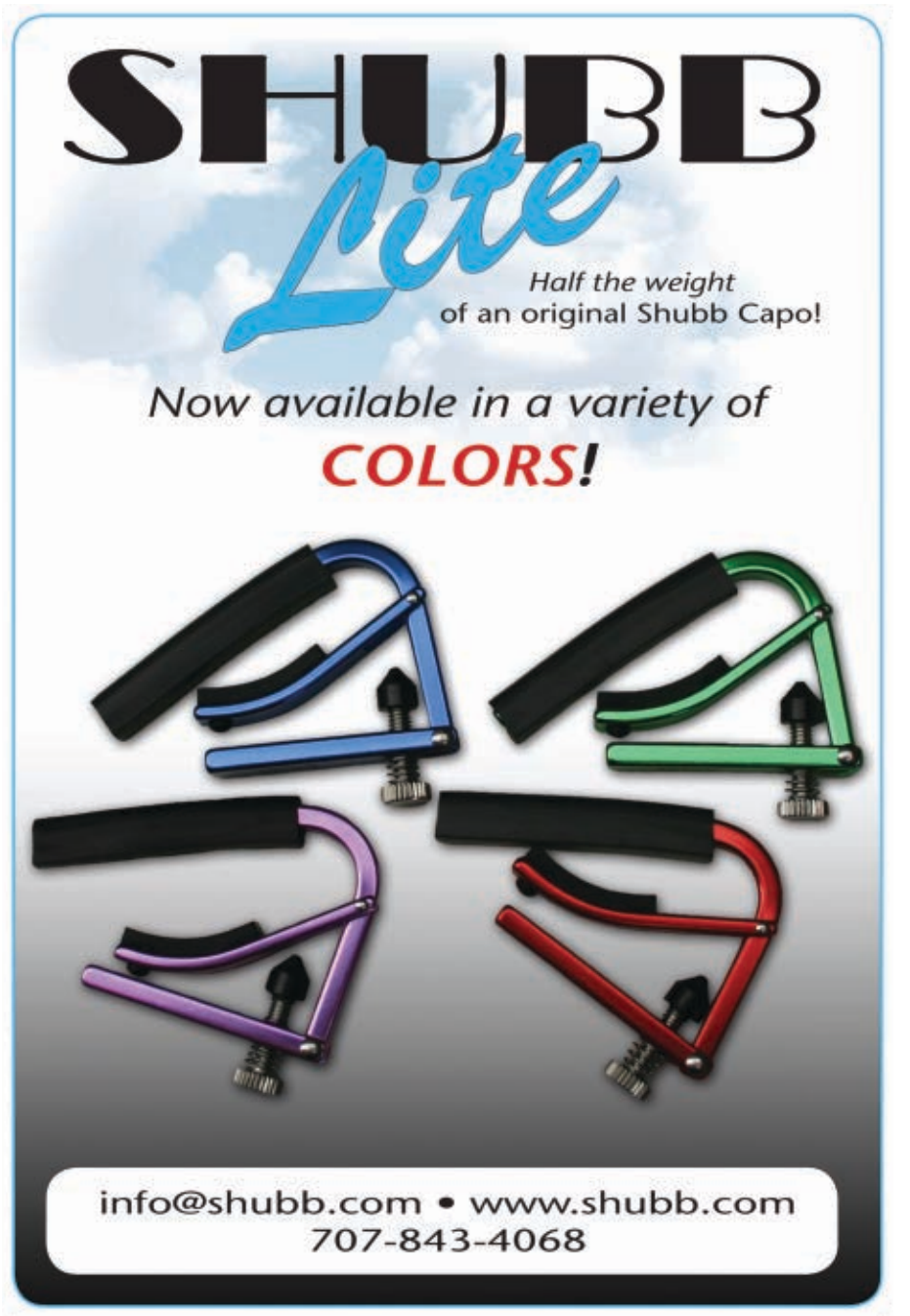
No one likes to make a decision. That's why albums are taking three years now. They'll record something: "Tell you what, I don't think it will work, but let's keep it until the mix and make the decision then." ... Just make the bloody decision up front.



just sounded *quiet*. Everything was being sucked up. We finished up canceling the sessions and moving to [NYC studio] Electric Lady, which worked great. So that's an example where, yeah, the room can affect everything.

What's your recording process?

It depends on the musicians and the music. With Missing Persons, because Terry was one of the main writers, he knew exactly what needed to happen from the very beginning. Terry wanted it to appear that the drums were pulling everything along. He wanted to be ahead of everyone the entire time. So the way we worked with him was, it was just him playing, no one else, no guide tracks or anything. He just played the track. Once we got a drum track that really swung, that felt great, we knew we'd gotten the basis for the track. Then we started to overdub things. I felt so sorry for Patrick O'Hearn, the bass player, because we'd be doing a take and so often it was just eighth-notes and Terry would be, "No, no, no! You've got to hold back a bit. *I'm* pushing, *I'm* pushing!" It was so minute and Patrick was going through hell, but it all worked in the end.

So in that instance, it was just drums. Other times, it's bass and drums, just going for those. There are obviously times where I've gone for guitars, bass, and drums. And then I've overdubbed from there. It depends.

You've said that the best way to learn to record is to limit yourself to 4-track equipment.

Absolutely! It's the thing of making decisions. Because that's something that, for me, is missing these days. No one likes to make a decision. That's why albums are taking three years now. They'll record something: "Tell you what, I don't think it will work, but let's keep it until the mix and make the decision then." So you finish up with 199 almost useless tracks and you're going to decide at the end as to whether they work or not. It makes mixing horrendous. Just make the bloody decision up front. Have an idea of the final product and make the decision during the takes.

I always used to do it. We'd be going through, "No, that's not the take," and

go back and erase it. I'd record over it and keep on doing it. The decision was made then and there: "Yes, that's the take, we'll keep it." That's why I would love engineers and producers to spend some time working on 4-track because obviously you have to make decisions.

Are you committing to compression and EQ as it goes down?
Oh yeah, do it right. I like to hear the record as we're putting it together, the final thing.

When it comes time to mix, you're basically able to push the faders up and then just be creative with what you want to do with the mix. You don't have to worry about making the tracks work.
Yes, absolutely. You already know it works to 75-percent certainty, and it's just zeroing in on the other 25 percent to make it magic.

Do you have a specific approach to recording acoustic guitar?
My normal way of doing it would probably be an AKG C414. I do it really close, it's angled at the hole or it's angled more toward the bridge end. I've found that acoustic guitars are a little touchy. You have to do more with the mic and the mic placement with an acoustic guitar. So I will experiment more with an acoustic guitar, trying things.

Have you found any modern microphones that are useful to you?
No—but there are always exceptions to the rule. When I did Missing Persons, the first set of recordings that I did with them—which were originally supposed to be demos, and they finished up being amongst their most popular songs—we went into Frank Zappa's studio to record. Frank had just had that studio built. He was on the road and he wanted to come straight back in and start working in the studio. He knew my reputation for finding every possible fault that there is in a studio, so he allowed us to have it for free knowing that I would find all the faults and get them fixed before he came back off the road. The problem was that all of his best mics, which were the ones that I would normally use, he had on the road because he recorded every

Ken Scott recommends making recording decisions early in the studio, on the spot, rather than waiting until later. Photo courtesy of EMI Archives

single performance. So we had to work with his sort of "B" mics. When you hear the album, there's a mix of some of those tracks that we did there with the "B" mics and the rest of the stuff I did at my regular studio with the "A" mics and you can't hear the difference!

As I say, it's down to the monitors, because if you know what you're listening to, you can adjust to anything.

For someone who's working at home and they're trying to do a professional-sounding recording, do you recommend that they go rent some of those A-list microphones or should they try to get the sounds with microphones they can afford?
No, try and get the sounds with the microphones they can afford. But make sure that what they're listening to is good.

So put the money in the monitors.
Yes, absolutely, every time.

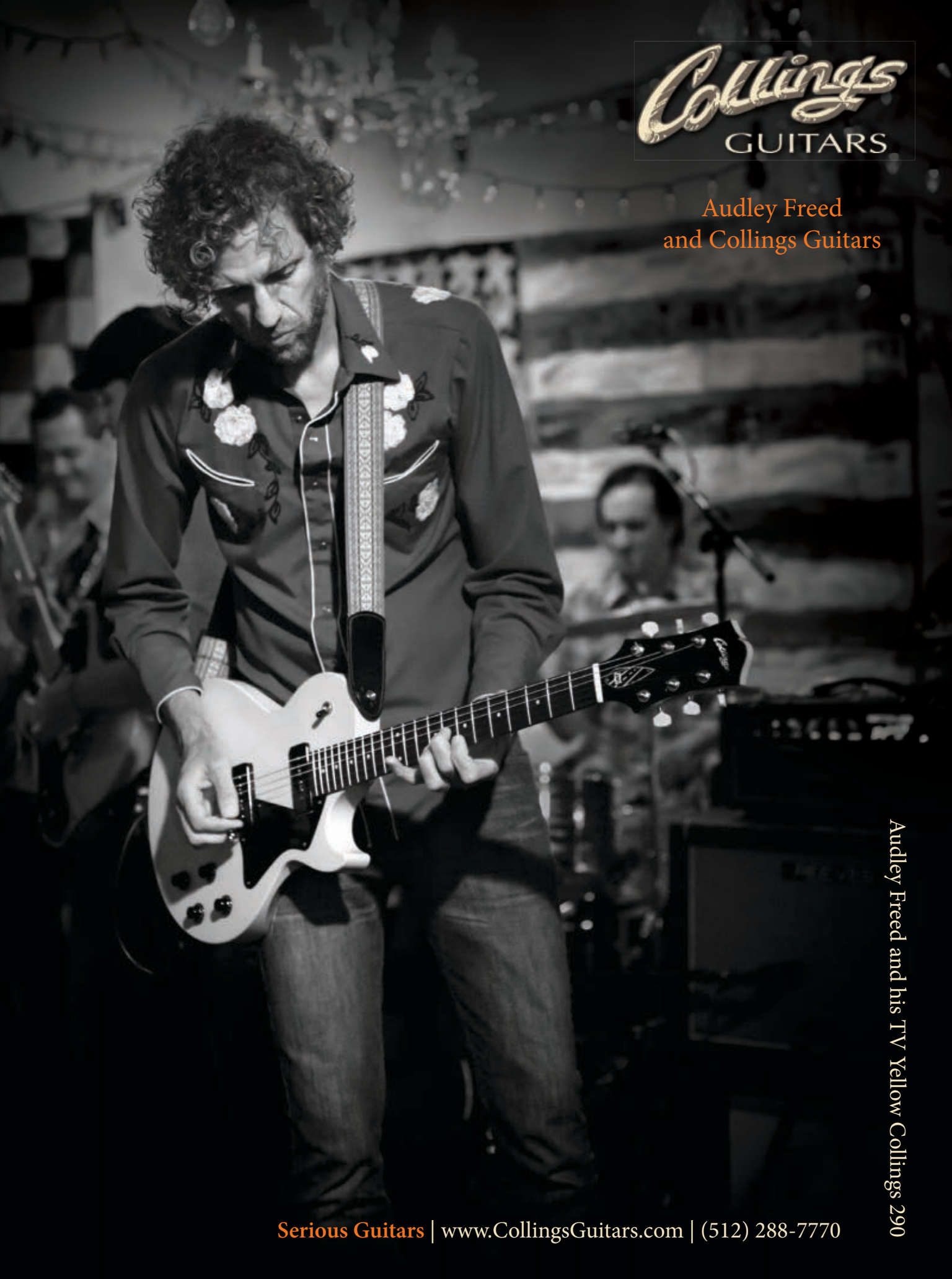
How can an artist keep their creative spark and be willing to take chances?
You have to make music for yourself, to make you happy. You can't make it to have a hit. Too many acts these days, they're out there to get a record deal or to make money or to become famous. The Beatles never started that way, The Who never started that way. Jeff Beck never started that way. They started because they wanted to make music. U2—the same. They made music because they enjoyed making music, and people started to like it. That's the way to do it.

If you're doing it to make pure money, you're never going to be happy. Because more often than not, you're not going to make that money! If you're making it to please yourself, at least you've pleased yourself.

If you're doing it purely to make money, you're never going to be happy. Because more often than not, you're not going to make that money! If you're making it to please yourself, at least you've always pleased yourself. If other people like it, that's the icing on the cake.

The other thing is, play out live as much as possible. You learn your gig from the audience, from what they give back to you. You don't learn your gig in the garage, rehearsing, rehearsing, and rehearsing. You don't get to know what people think of what you're trying to do.

Any other tips for capturing great guitar recordings beyond what we've talked about?
It needs to come from the guitarist in the first place. If you take Mick Ronson, his sounds were always unique. He'd get his tone by going through a wah-wah, finding the place where we all liked the sound and then leaving the wah-wah there. You find your own techniques to get what you want across. It's just a question of experimenting and finding what works for you.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FRACTAL AXE-FX II

PREMIER GEAR

BY JOE CHARUPAKORN

"This thing is the greatest invention ever for electric guitarists," Dweezil Zappa told *Premier Guitar* at last year's LA Amp Show as he gushed over Fractal Audio's new Axe-Fx II—the company's follow up to the very successful Standard and Ultra models. While such a bold statement might raise eyebrows among those numbed by marketing hyperbole, no one could argue that the Axe-Fx II isn't an extraordinarily powerful signal processing system. It's so capable that big bands like Deftones, Megadeth, and Animals as Leaders have forsaken massive rigs for a lone Axe-Fx II, and guitar gods like Steve Vai and John Petrucci integrated the units into existing rigs. And remember—these are players who can afford to have roadies carry backbreaking towers of gear, and yet they're so enamored with the Axe-Fx II that they opt to leave the heavy stuff at home.

In the simplest terms, the Axe-Fx II is a rackmountable preamp and effects processor. But that description *barely* scratches the surface of what this thing does. What makes the Axe-Fx II remarkable is that it's powerful enough to replace a lot of traditional amp/effects/cab setups. It's a major improvement on the already impressive previous Axe-Fx models on many counts, as well. Two TigerSHARC processors (versus the Standard's and Ultra's single processor) run the new G2 modeling technology, which generates twice the processing power of its predecessors and improves sound quality. In fact, one CPU is dedicated entirely to processing the amp sounds. Other upgrades include a larger LCD display and a quick-control section with X and Y buttons for channel switching and four knobs for editing multiple parameters on a single screen. There's also a USB 2.0 jack for computer connectivity, which makes the Axe-Fx II a serious audio/MIDI interface with capabilities like re-amping and recording.

A Handle on the Axe

The Axe-Fx II is so feature packed we couldn't possibly discuss it all here. If you've avoided multi-effects units because of their inherent navigational challenges, I'm not going to lie to you, the Axe-Fx II is even more complex than most. But expecting a simple plug-and-play experience would be naïve, and there's just no way that a piece of gear that many regard as the ultimate guitar processer is going to be as user-friendly as a Tube Screamer. But if you put the time into learning how the system works, you'll find there aren't many sonic stones the Axe-Fx II leaves unturned. And the hours you spend climbing the unit's steep learning curve very well may reward you with every tone that has ever eluded you.

Navigating the unit's myriad options involves moving through a lot of submenus and scrolling screens—and they all take practice and time to get to know. Still, I was eager to see how easily I could extract sounds without consulting or printing out the 178-page PDF manual. But without direction even some very basic functions—such as tuning—can be tricky. For example, pressing the tuner button led to a familiar-enough readout, but I had to consult the manual to discover that the recall button gets you back to normal mode. That said, if you want to ease into the manual, a very handy 60-second edit guide helps you take your first steps. And a free software editor/librarian makes everything easier to navigate and use on a computer if you're accustomed to software instruments and plugins.

After investing some time in manual research, things got easier. You scroll through presets using the big value knob next to the screen, and the four navigation buttons next to it move through the presets either one at a time (up and down) or in increments of 10 (left and right), which is handy if you want to go from, say, preset 4 to 54 in a jiffy. Chances are, though, you'll want Fractal's optional MFC-101 foot controller when you've got this many options to choose from.

Each of the 384 editable presets represents a complete signal path of amp, effect, and cab. Pressing the layout button takes you to a screen that displays everything in the signal path from left to right, as blocks on a grid. You can change or rearrange components on the grid, such as amps, cabs, or effects, and

wire things up in any order or arrangement that suits you. The edit button then enables you to open block menus and set the desired parameters for each component. Once you have that process down, operating the Axe-Fx II becomes much more fluid.

Super Models

I tested the Axe-Fx II with a variety of guitars, including a Gibson Les Paul Standard, Fender Strat, Ernie Ball Music Man Axis Sport, and Parker Fly Deluxe, as well as a Mesa/Boogie 2:90 power amp and a QSC K8 powered PA speaker.

You can explore models of plenty of popular amps—including a Fender Deluxe Reverb, a Marshall plexi, a Mesa/Boogie Dual Rectifier, a Dumble Overdrive Special, and a Peavey 5150—but there are less mainstream amps, too, like the Cameron CCV 100 and Carol-Ann OD2, as well as original Fractal creations. There are also lots of presets based on classic guitar songs, like "People Get Ready," "Still Got the Blues," "Cliffs of Dover," and "Sultans of Swing" (to name just a few), as well as wacky sounds that have to be heard to be believed. These include "A Clockwork Banana," "Intrigue [C Minor]," and "Horror Movie."

I decided to start out by cranking the Axe-Fx II 's Deluxe Reverb model and comparing it, back-to-back, to my own blackface Fender Deluxe Reverb. In all honesty, it had me doing double takes—the sound was virtually identical. The trademark Fender sparkle, tube warmth, and sweet breakup were all audible in the modeled version. More importantly, the *feel* and dynamics were very amp-like. And a big plus with the Axe-Fx II version over the real amp is that you can very easily run it through different virtual cabs—say, a model of a Celestion Gold-equipped 2x12 or a 1x8 tweed—to get totally different flavors from the same amp without fretting over ohms or filling your garage with cabinets of every size.

Clearly, the Fractal guys took everything into account when embarking on their mission to create realistic models—even amplifier attributes some might consider less than optimal. The Recto Orange, for instance, had as much noise at idle as the orange channel on my Mesa/Boogie Tremoverb. But other high-gain models such as the Solo100 Lead, based on a Soldano SLO-100's lead channel, were dead quiet. This not only led me to believe the Orange Recto fizz was a deliberate recreation, but it also lent credence to Fractal's claim that the new G2 and Virtual Vacuum Tube technology "models the entire power amp including the tubes, transformers, choke, filter caps and more."

The Axe-Fx II's other patches were great jumping-off points, too. I tried the "Eruption" patch using my Music Man guitar, comparing it to Eddie's original, and while a few other variables obviously came into play—not the least being the fact that I'm not actually EVH—the Axe-Fx II patch was superb: slightly darker and with less presence than you hear in the recorded version, but an excellent launching pad with the feel and reactivity necessary to explore the nuances of Eddie's style.

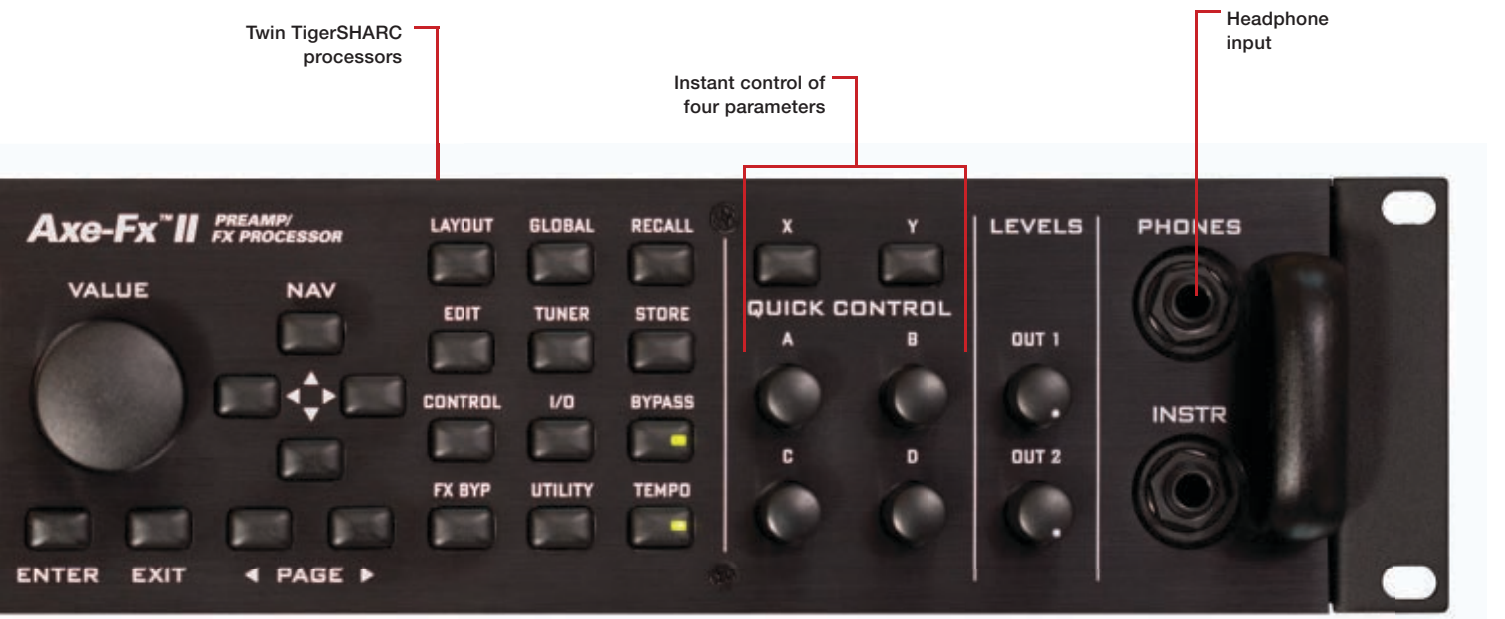
CLICKHere...
to hear audio clips of the Axe-Fx II at premierguitar.com/aug2012

Tone Clone

If you have a sound that you've always wanted to recreate exactly using your favorite guitar, or if you want to add the sound of a new amp to the Axe-Fx II 's library, there's an ultra-cool feature called tone matching. It lets you input an isolated signal—it can be an audio file or a live amp—and sample the tonal characteristics. If you're trying to match a recorded sound you'll want to start with an Axe-Fx II preset that's close to the signal you're sending. But once you're in the ballpark, the tone-matching feature frequency-plots the reference signal alongside the local (tone-matched) signal so you can compare and match the two.

The Verdict

If anything can bring the rack back in vogue, the Axe-Fx II will be the thing to do it. It's a complete, self-contained unit that does just about everything an amp-effect-cab setup can do (minus actually outputting the sound for the masses), and it pretty much avoids the Achilles heel that has long plagued many products of this



type—it offers the organic element of touch dynamics. There is some serious number-crunching power in the Axe-Fx II, and it adds up to a wealth of tones that would take a whole studio space—and a whole lot of material resources most of us don't have—to put together.

At almost $2,600, the Axe-Fx II is obviously still a significant investment, but the price of just one of the complete virtual rigs it affords would most likely cost much more. Even if you just used the Axe-Fx II for its effects, you'd have a phenomenal-sounding and almost limitless effects palette at your disposal. If there's a downside to the Axe-Fx II, it's more aesthetic than practical—something about the typical guitarist's psyche just digs having a rad-looking amp next to them onstage. This unit certainly doesn't have the visual allure of a road-beaten Fender tweed or vintage Marshall, but what it offers practical and adventurous players alike in terms of sonic potential is hard to put a price on.

RATINGS

PREMIER GUITAR PREMIER GEAR

Fractal Audio Axe-Fx II, $2599 street, fractalaudio.com

Pros: Exceptional sound quality and a true amp-like feel in a self-contained unit.

Cons: Steep learning curve.

Tones	5
Ease of Use	3
Build	5
Value	5

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CORT SUNSET 1

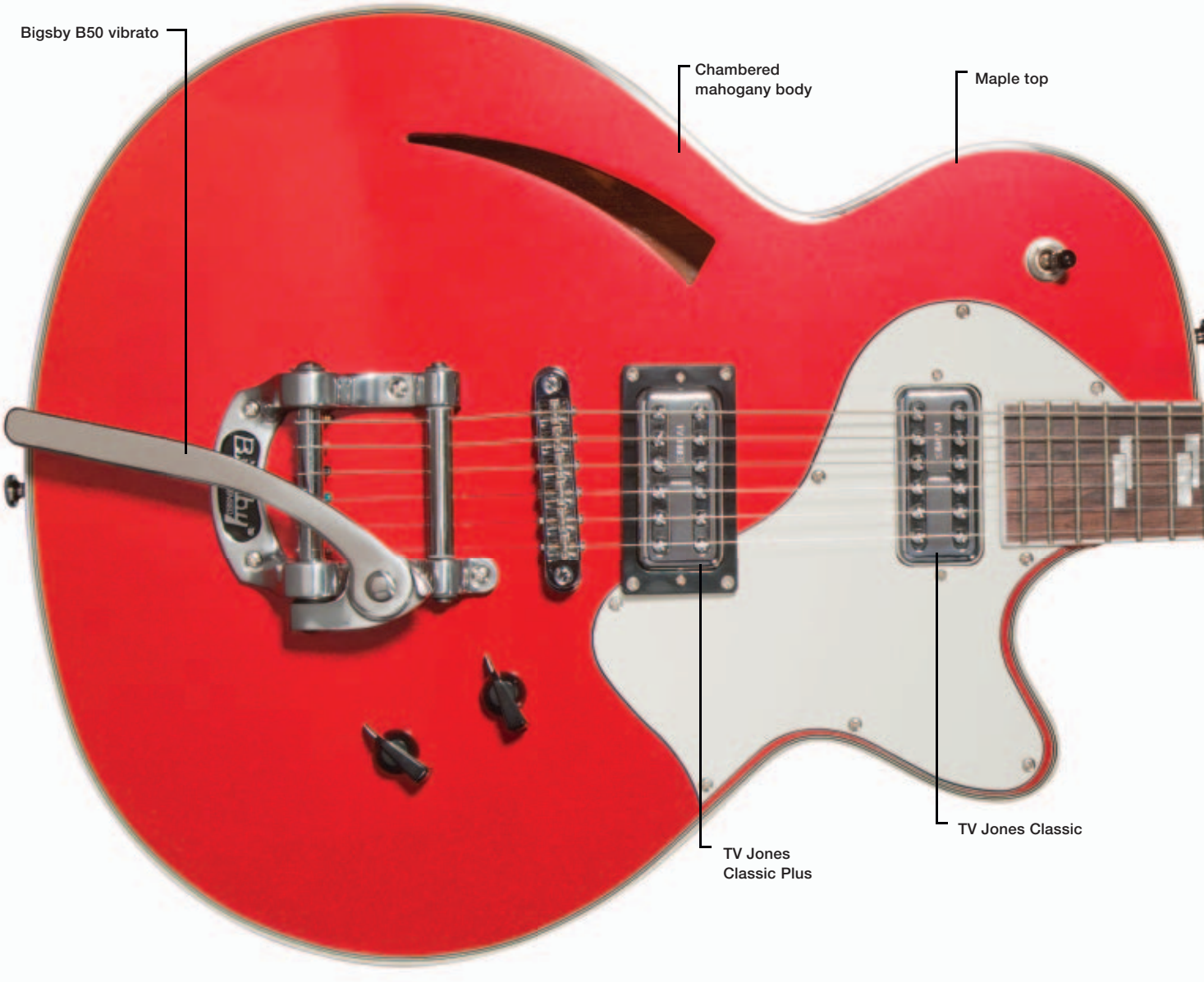
BY OSCAR JORDAN

Though not exactly a household name, Cort is one of the biggest guitar manufacturers in the world—building axes under its own name and working as an original equipment manufacturer for some of the world's top guitar brands. Cort has a knack for building high-quality guitars for the money, so the company's wares find their way into the hands of players from amateur to pro, even if sometimes the name on the headstock isn't theirs. The new Sunset series, however, is likely to help Cort's visibility among old-school players and purists interested in rockabilly, country, and alternative rock sounds. The Sunset 1 reviewed here takes a classic construction formula—a set mahogany neck, a chambered mahogany body, and a maple top—and adds TV Jones pickups and a Bigsby to create a classic-looking axe that's at once subtly hot-rod-like and yet a distinctive alternative to the usual suspects.

CLICKHere...
to hear audio clips of the guitar at premierguitar.com/aug2012

Welcome to Coolsville

The Indonesian-built Sunset 1 gracefully fuses several classic design elements previously seen on guitars such as the Gibson L5S, Rickenbacker F Series instruments, Kay's Barney Kessel model, and Gretsch's single cutaway Country Gentleman. The flawless candy apple red finish, white binding, and chrome hardware combine



to give the guitar a real showstopper vibe. With its 24 3/4" scale, 22 large frets, rectangular pearl inlays, and 12" fretboard radius, the guitar has a very authentic '50s feel that's complemented by the Gibson-like U-shaped neck profile—it's fast, smooth, and substantial, even if the frets could have used a little additional filing. The Tune-o-matic-style bridge and Bigsby B50 tailpiece are also a smart, functional combination.

The Sunset 1's electronics are one of its real highlights. There's a TV Jones Classic Plus humbucker in the bridge and a TV Jones Classic humbucker in the neck, and they're controlled by a 3-way toggle and "chickenhead" volume and tone knobs. It's a simple but effective array, and the range of tones on tap can be very inspiring.

Let's Go, Daddy-O

Weighing in at a solid 7.9 pounds, the Sunset 1 has a very balanced feel that never seems too heavy. The body is much more compact than a Gretsch and sits comfortably against your body. The only overt design drawback is that the volume and tone controls are situated directly beneath where the vibrato arm would be when you're using it, which can make fast access to the controls a little challenging unless you push the arm completely out of the way.

This guitar is great for spot-on rockabilly, spaghetti Western, and Chet Atkins Nashville-style picking.

The guitar came set up with .010–.046 strings, and action was just about perfect when it arrived. Unfortunately, the Bigsby tended to knock the lighter strings out of tune, but I fared much better with a set of .011s. Otherwise, the Bigsby bar was stiff and solid, as it should be, and in addition to getting that textbook, multi-string Bigsby warble, I was also able to pitch a note up a whole major third.

If it's twang you want, the Sunset 1 is the ticket. Plugged into a '65 Fender Deluxe Reverb, it yielded sounds from spiky to glassy and warm depending on the pickup setting. Though it lacks the luxurious sophistication of a Country Gentleman and some of the harmonic depth and resonance you get from a full hollowbody, there are plenty of sounds that get you right in the Gretsch wheelhouse. This guitar is great for spot-on rockabilly, spaghetti Western, and Chet Atkins Nashville-style picking. The TV Jones pickups can tend toward edgy with some clean settings—though in the very best sense of the word—but it's easy to take some sizzle off with the tone knob, too. With a little additional tone-control manipulation and a switch to the neck pickup, I summoned some throaty Charlie Christian tones, too.

The Sunset 1 is more than capable of rocking hard, too. Running through a 120-watt high-gain Peavey head, it dished out Nugent-style brutality that simultaneously sounded smooth, woody, and wooly. The pickups handle distortion beautifully—driving cranked amps with a smooth growl that's never muddy. While they might lack top-end sparkle in some situations, they often seemed to work with the chambered body to give otherwise spiky notes a cool, moaning quality.

The Verdict

The Cort Sunset 1 is a great guitar for the money, with a distinct but malleable personality and versatility that delivers on everything from twanging, George Harrison-style chord leads to wailing "Cat Scratch Fever" moods, depending on your amp and how loud you're willing to crank it. Even with the control knobs mounted too close to the tremolo, it's a blast to play, and the chambered body and TV Jones pickups make the guitar a tone playground that you just can't get from a solidbody.

RATINGS

Cort Sunset 1, $750 street, cortguitars.com

Pros: Wide variety of tones. Great build quality. Cool looks that won't send you to the poorhouse.

Cons: Volume and tone controls are inconveniently located. Bigsby can be tough to keep in tune with lighter strings.

Tones	4½
Playability	4½
Build	5
Value	5

CLICKHere...
to hear audio clips of the guitar at premierguitar.com/aug2012

AXL USA
BULLDOG AL-1090

BY JORDAN WAGNER

Playing guitar can be an expensive habit. But sometimes the hunt for tone has to go hand in hand with an eye on saving cash. And these days, the convergence of the two concerns is more common than ever. AXL Guitars, a division of The Music Link (which also distributes Recording King acoustics) built their company around players that have to reconcile refined tone needs and smaller budgets. In an intriguing move, they recently introduced their USA line—guitars assembled Stateside with high-quality hardware and components using bodies and necks built overseas. The result is a guitar of impressive quality and personality.

Raging Bull-dog

The Bulldog is heavily influenced by the single cut Gibson Les Paul Junior—right down to the materials, tone, and build. But for all its simplicity, the Bulldog sports some pretty cool improvements on the form—most from well-regarded aftermarket companies.

All of the guitar's assembly takes place in The Music Link's Hayward, California facility—right down to pickup soldering, hardware installation, and pounding, dressing, and finishing of fret wire. The imported bodies and necks are well-built foundations for the guitar. The body is crafted from three pieces of very lightweight solid mahogany, and from a few feet away, it's pretty difficult to see the wood joint lines in the body. The 24 3/4" scale neck is made up of a single piece of mahogany, rather than a two- or three-piece design that some builders use to cut costs. The Bulldog also uses a set-neck design rather than a more cost-effective bolt-style that could hamper the guitar's sustain. The 22-fret neck is topped with medium jumbo frets and a rosewood fingerboard that's inlaid with pearl dot markers and topped with a Graph Tech nut for smoother tuning. Our review guitar is finished in a vintage transparent satin red, though it's available in a transparent brown satin finish, too.

AXL chose some pretty top-shelf hardware for the Bulldog, including a set of TonePros Kluson 3+3 tuners, a TonePros aluminum featherweight wraparound bridge, CTS pots for the guitar's volume and tone controls, and an Orange Drop capacitor for even high-end roll

off. Perhaps the nicest touch is a single dog-eared Lindy Fralin P-90 pickup with an Alnico 4 magnet and adjustable pole pieces. Just like the Les Paul Junior, the control set is dead simple—just single volume and tone knobs. But there's also the added bonus of a push-pull pot that kicks the tone control out of the circuit when engaged—enabling more high end bite and attack to shine through.

Bark as Nasty as Its Bite

The Bulldog manages the impressive feat of being more than the sum of its (very nice) parts. And in many instances, it greatly exceeded my expectations for a guitar that costs around five bones.

With a Fender '65 Twin Reverb in the mix, the Bulldog's clean tones were powerful and at times, stunningly detailed. Fralin's P-90, which is known in boutique circles as being a battle-tested tone machine, goosed a sweet range of highs and mids, with a soft, yet tight low end that responded very naturally to alternating picking techniques. What was most noticeable though was just how *good* the guitar felt in my hands. The neck's medium-C profile is chunky, but not so much that it hampers quick runs and riff changes.

The Bulldog is very responsive to pick attack and exhibits a lot of sparkle and capacity for detail. The tone control bypass is very effective for getting more Strat-like tones—perfect for clean, arpeggiated picking and bluesy Hendrix-influenced rhythm work—while still retaining the pickup's characteristic meaty tonality.

Through an overdriven 50-watt JCM800 the Bulldog is equally at home, though the combination coaxes more growl than bite. The midrange tendencies of the Marshall make the Bulldog bloom and roar—a reminder that few things are as glorious as a great P-90 driving a Marshall head. The Bulldog cleans up very smoothly just by rolling off the guitar's volume control, though it loses some of the ripping qualities in the upper end. In general, though, the Bulldog sounds great clean and it can have the effect of helping a gritty amp feel like it has a lot more headroom.

The Verdict

In the Bulldog, AXL has put together a guitar with feel and tone that would probably cost hundreds more with another name on the headstock. The Bulldog's wide range of tones will enable you to move between mellow classic rock, warm blues, and even hard-driving modern rock, complete with squealing leads and brazen scooped-mid raunch. Pretty darn impressive for a mahogany slab with a single P-90 onboard.

AXL's USA team has done a bang-up job with the finish details and quality components that tone nerds *and* working players really care about. It's not without limitations—what single pickup guitar isn't? But if you're looking for a no-fuss guitar with P-90 character a budget, the Bulldog is a near unbeatable value.

RATINGS

AXL USA Bulldog AL-1090, $549 street, axlguitars.com

Pros: Exemplary fit and finish. Superb aftermarket hardware choices. Great price.

Cons: Treble-heavy at times. No neck pickup. Only satin finishes available.

Tones	4.5
Playability	4.5
Build	4.5
Value	5

MIKE LULL JT5-24

BY STEVE COOK

Mike Lull has been flying under the mainstream radar and making superb basses and guitars for almost two decades now. His basses are revered in the low-end community and are the go-to for a number of top players because of how well he fine-tunes features to yield instruments that feel like upscale variations of basses made famous in Fullerton. Lull does all the designing and building himself, and in doing so, has made his name synonymous with tone and reliability.

Those familiar with Lull's work tend to know of his P- and J-style offerings, while his T-bird-style designs are popular in a more specialized niche. The mad scientist in all of us can dream of combining the favorite characteristics of classic designs, but with the JT5-24, Mike Lull actually takes that plunge with a nod to Dr. Moreau.

CLICKHere...
to hear audio clips of the bass at premierguitar.com/aug2012

On the surface, the JT5-24 is a simple, elegant instrument with clean lines and a gorgeous tobacco-burst finish, but something is amiss—in a good way. Are those T-bird pickups on a J-style body? Are you even *allowed* to do that?

Ain't That Tough Enough?

The notion of modding a production model in-house is nothing new—Henry Ford probably lowered a Model T and put in a bigger engine way back when. Lull's "engine" comes in the form of a pair of custom T-Bass pickups, and the "chassis" is based on the J-style bodies used for some of his other models. But two subtle differences also make this bass special: It's a 5-string, and the 35" scale allows for a 24-fret, two-octave neck.

The JT5-24, like all of Lull's basses, is handsomely designed. From its Hipshot Ultralite tuners to the strap locks and its aluminum bridge, every detail has been given proper attention. The low-profile, C-shaped neck is constructed of beautiful quilted maple that's reinforced with graphite, and up top it sports a bone nut to boot. As an added bonus, all Mike Lull basses feature frets that are precision leveled using a Plek machine, which ensures better intonation and lower action than manual dressing.

When I flipped the JT5-24 over, I noticed a couple other notable things, too. The first was the single ferrule for the low B string. The second was the battery compartment above the control cavity. Since this is a passive bass, I was puzzled by the latter and had to immediately have a look. It turns out Lull was thinking of expansion

when constructing the bass: Players who wish to add active tone circuits will have an easy time of it thanks to the included compartment (the JT5-24 can be ordered with Bartolini or Aguilar active circuits from the outset, too). While the layout of the control cavity was clean and soldered perfectly, I did notice that the electrostatic shielding was flaking in spots—not a huge issue, but it could pose a little trouble with cleanup later on. Lull states that the shielding paint is actually underneath the finish paint, so as to not have any flaking problems. Any visible shielding paint would have been put on afterwards—just around the ground lug—as a safety measure for grounding.

The warmth and roundness of each note hit a soft place in my heart—the JT5-24 wonderfully captures the essence of a bygone time—but the addition of the low B string yields an instrument that goes beyond the limitations of the past.

Fun, Fun, Fun, Till ...

After a slight setup (the bass arrived with the action at a finger-touch level), I was ready to hear this JT5 and get my T-bird on. The dual T-bird-style pickups are wound to the same specs as '60s-era pickups, and they've reportedly been reverse-engineered to faithfully reproduce the originals. And you know what? They sounded *pretty* damn good.

Tested through an Eden 115XLT cab pushed by either a Gallien-Krueger MB800 or an Eden WTX-500 head, the T-Bass pickups produced a punchy, thick tone that was absolutely reminiscent of another era—which was definitely strange, since the meaty T-bird-like sounds were coming from a J-shaped instrument. While I had to spend a little time getting comfortable with the string spacing, which was just a touch wide for my taste, I was ready to find out what the JT5 could do.

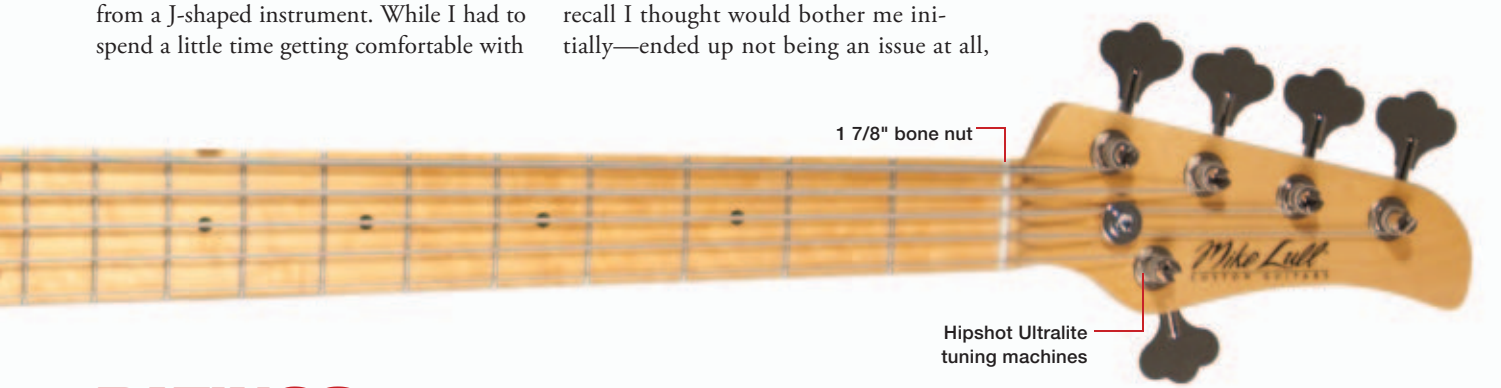
What I found out was that this bass was built to rock. *Hard.* Starting with the neck pickup's volume and the tone knob at the halfway mark, the bass sounded fantastic. The warmth and roundness of each note hit a soft place in my heart—the JT5-24 wonderfully captures the essence of a bygone time—but the addition of the low B string yields an instrument that goes beyond the limitations of the past. The low B was tight, sustained for days, and added a modern twist to the T-bird-esque sound.

When I pushed the bridge pickup to join its twin, the tones became more modern and pronounced—but not to the point of losing the classic vibe. Even with the tone knob cranked, the bass did not get out of control. The overall tone was more mainstream, and that flexibility is nice—especially if this were to be your only instrument.

Both fingerstyle and pick players will feel right at home with the JT5-24. The 35" scale and string spacing—which you'll recall I thought would bother me initially—ended up not being an issue at all, and the neck was lightning fast. Although I personally don't play with a pick, the low B just *loves* the plectrum, and I could imagine the resulting sound all over rock records. The only drawback I could possibly foresee for thumpers out there is that the massive T-Bass pickups and the limited space between the neck pickup's housing and the neck might make it difficult to get under the strings and really dig in without banging the pickup covers. That said, I haven't seen a lot of bassist slapping away on a T-Bird lately, so it's probably not a big issue.

The Verdict

Mike Lull has been improving on traditional designs for years, and with the JT5-24, he has taken some of those "what if" questions and moved the ideas into reality. The craftsmanship is undoubtedly top-notch, and the appointments are fantastic. It's like a T-bird, but without the T-bird elements that some players dislike. The contoured, J-style design will please players looking for that tone in a more traditional and ergonomic body shape.



RATINGS

Mike Lull Custom Guitars JT5-24, $3,255 street, mikelull.com

Pros: Classic, hard-to-get tones in a traditional, more player-friendly package.

Cons: Somewhat pricey.

Tones	4.5
Playability	5
Build	5
Value	4

In the end, I concluded that the JT5-24 is most at home with the beefy tone from the neck pickup. While I appreciated being able to add a midrange spike with the bridge pickup, I found myself rolling it off more often than not. But in this case, that's not a bad thing at all.

J. ROCKETT AUDIO DESIGNS

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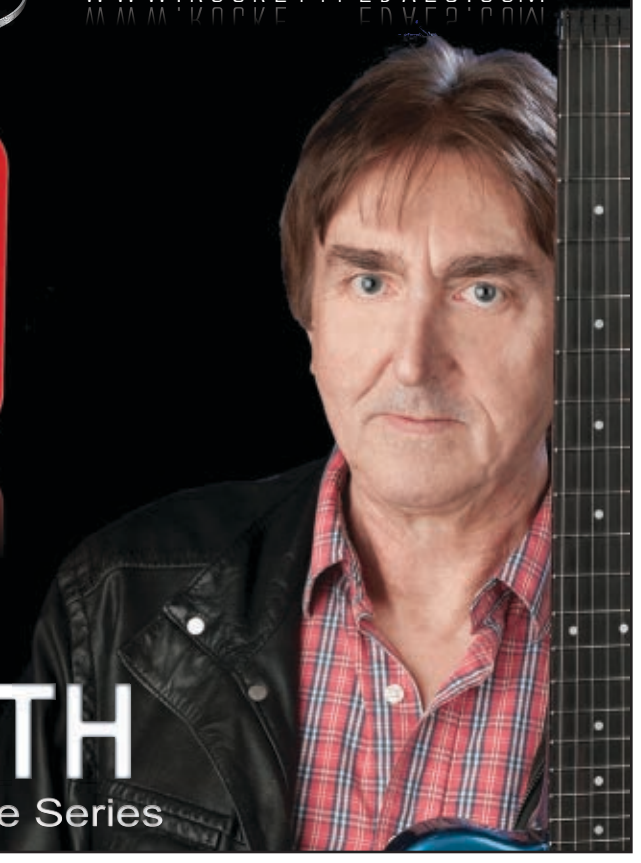

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CRUSHSOUND
FARMER'S MILL

BY CHARLES SAUFLEY

Sometimes, in the quest for buttery, singing, and perfect diamond-like tones, you can forget about the twisted potential of stompboxes, how beautifully demented their creators can be, and what a delightfully varied art form music is in the first place.

Consider the Crushsound Farmer's Mill. This is a stompbox born of motivations most traditional guitarists would consider bizarre. It unapologetically exists—in part—to create the sound of your cable or jack crapping out. And if at first that sounds like a waste of your hard-earned cash, few would fault you. But the Farmer's Mill is a thoughtfully executed and well-built piece of gear that digs deep into the artistic notion of creation through destruction. And no matter where you stand on that particular aesthetic gesture, for musicians that live comfortably outside convention and willingly incorporate more chaotic sounds into their playing, the Farmers Mill can be a surprisingly powerful musical tool.

Set to Destruct, Indestructible

The Farmer's Mill is a very cool, thoughtful, and downright lovely piece of stompbox design, which is no surprise given that architect Jedrzej Lewandowski (check out his "House on the Water" super-villain lair/fantasy pad) is a part of the brain trust that conceived the pedal. The thing is a rock—built with thick, unbending steel that rings like a church bell when you tap it on the bottom panel. Considering that this is a pedal that's likely to be used in chaotic stage situations, that's a good thing. Apart from flinging it from a fifth floor apartment window, it will take a lot of effort to do damage to this pedal. It's also a good-looking pedal. The footswitch is situated in the center of a stylized windmill graphic, while the three chicken-head control knobs are stacked vertically along the left edge—spaced far enough apart to switch on the fly.

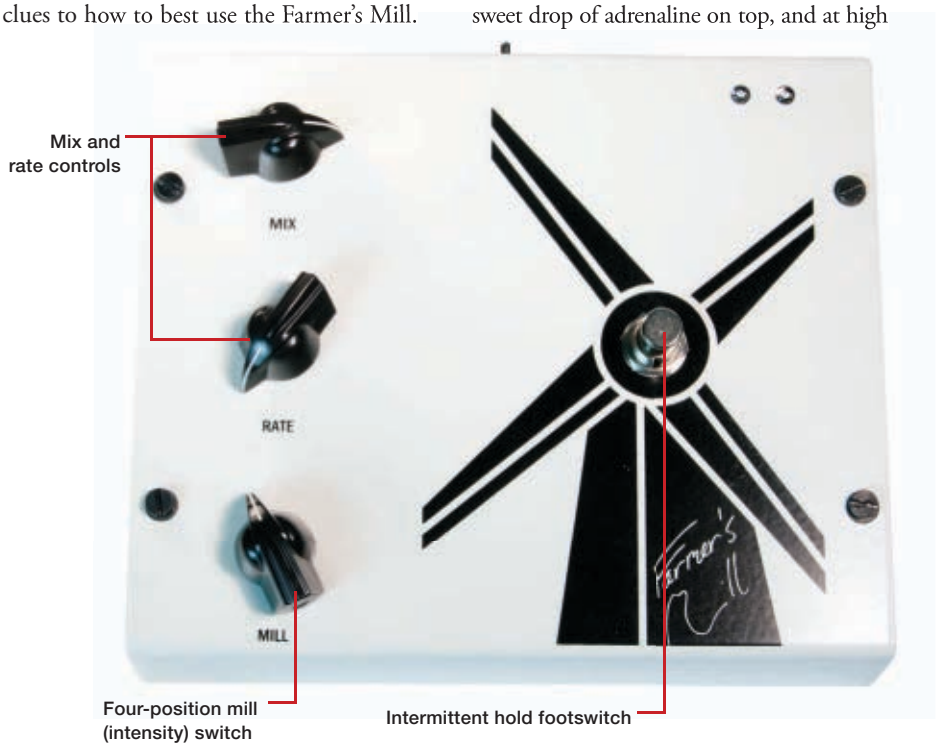
Manipulating the controls is relatively intuitive once you get a handle on how the pedal works. But keep in mind that the controls enable you to manipulate some very unusual effect parameters. Mix is the most straightforward, and permits you to balance your straight and effected signal. The rate knob is where things start to get more esoteric, but essentially it determines the frequency with which the crackling, broken effect kicks in. The mill knob is actually a four-position switch, and it increases the intensity of the effect as you move it clockwise. The footswitch—rather than a click-it-and-forget-it type switch works only when you hold it down—an indication, perhaps, of how judiciously you'll want to use this effect.

Parts Unknown

You have to approach the Farmer's Mill with an open mind. But what really helps is a dose of punky, irreverent, smash-'em-up attitude. To start, go to YouTube and check out a young Pete Townshend assaulting his Rickenbacker and stacks on "Anyway, Anyhow, Anywhere"—it'll not only fire you up appropriately, but it'll offer important clues to how to best use the Farmer's Mill.

CLICKHere...
to hear audio clips of the pedal at premierguitar.com/aug2012

I set the pedal up on the tail end of a chain of fuzzboxes and just before an analog delay with a feedback-ready rig of a cranked blackface Tremolux and a Rickenbacker 330—and taking a cue from Pete—launched into the barrage of hanging 1st position and power chords that makes up the Who's "Circles." With the mix and rate at high noon and the mill switch in its second-most intense setting, the Farmer's Mill became great punctuation for big-lingering chords—especially when I threw in some switch toggling to add to the anarchy. It would be easy to dismiss such use of the Farmer's Mill as mere theatre—and to be sure, throwing the effect on is an attention grabber. But there's a real musicality to the way the Farmer's Mill sounds in this context—and if you thrill to the sounds of Townshend's auto-destruct assaults or the raw, unbridled aggression of punk and garage, the Farmer's Mill has a knack for adding a sweet drop of adrenaline on top, and at high



volume, the thrilling sensation that the whole house is about to come down.

The Mill works well with different flavors of low-to-medium gain fuzz and buzzing '60s-style fuzz tones. And switching quickly between fuzz voices created a cool compound chaos that could be thrilling, were it not for the effort it took to keep the Farmer's Mill bypass switch depressed while activating different fuzzes. And this is one situation where the otherwise cool intermittent switch setup became a considerable limitation.

At more extreme settings, the Farmer's Mill is great for more experimental expressions. And it's a great texture to have on hand in recording situations. I mixed a few tracks of detuned chords subjected to the Mill's more aggressively crackling fourth position into a sort of melodic, musique concrète-styled sound collage—which added a touch of dread and menace not unlike the haunting sound of Thurston Moore's dying amp on Sonic Youth's "Providence." More adventurous applications aside, though, the Farmer's Mill gets a lot less practical at these extreme settings—especially when you dial the mix way up. And if you are using this pedal in more conservative settings, it might be best to reserve use for a really big finish or the more controlled environs of the recording studio, where this pedal can be a real asset.

RATINGS

Crushsound Farmer's Mill, $450 street, crushsound.com

Pros: Rock solid and artfully designed. Delightfully chaotic. Great studio tool.

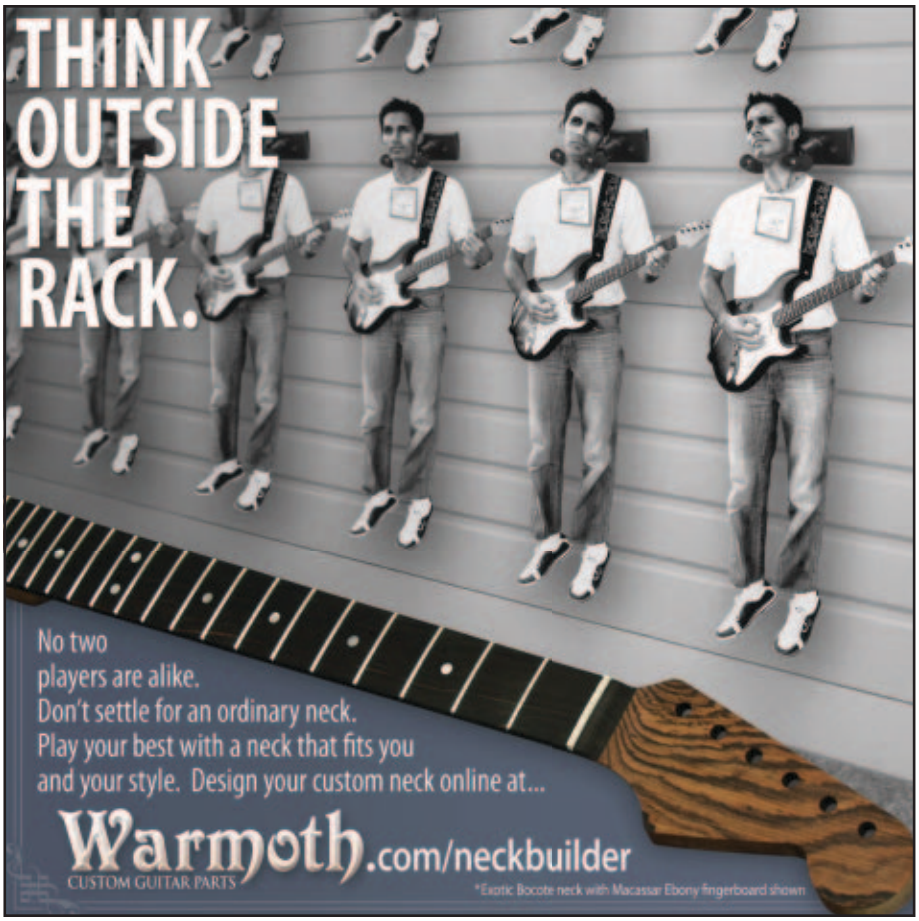
Cons: Very expensive.

Tones	4.5
Ease of Use	4.5
Build	5
Value	2.5

The Verdict

Most tone purists and traditionally minded players won't find much use for the Farmer's Mill, in fact, chances are that many will find it downright repellent. But guitarists who live on the experimental side of the fence and understand and value the expressive side of sonic chaos will relish the potential of what the Farmer's Mill can do. While radical at its core, it can be dialed back to be very effective and highly musical when used judiciously. And if it's pure bedlam you're looking for, the Farmer's Mill is *more* than willing to take the ride.

A few modifications—like a set-and-forget switch and an expression pedal option for the rate control—would make the pedal even more usable. But the Farmer's Mill really is about surrendering control for your sound to some extent, which can be a very powerful creative gesture. It's fun to imagine the wildly varied and new music that can emerge from that mindset, and it's reassuring to know that madmen are building pedals like the Farmer's Mill to make such music happen.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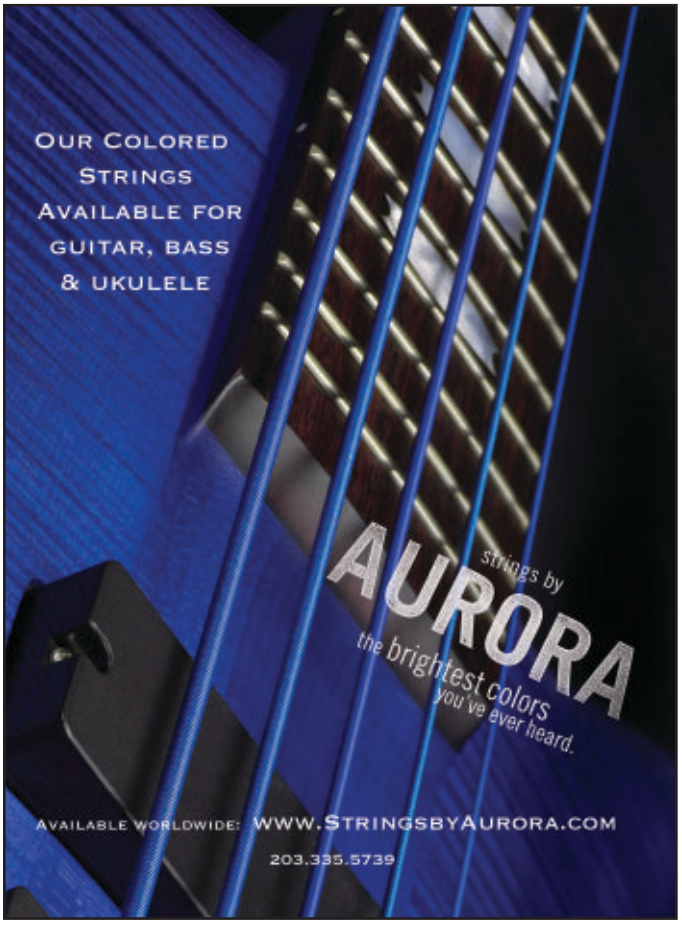


HAHN MODEL 1229

PREMIER GEAR

BY DIMITRI SIDERIADIS

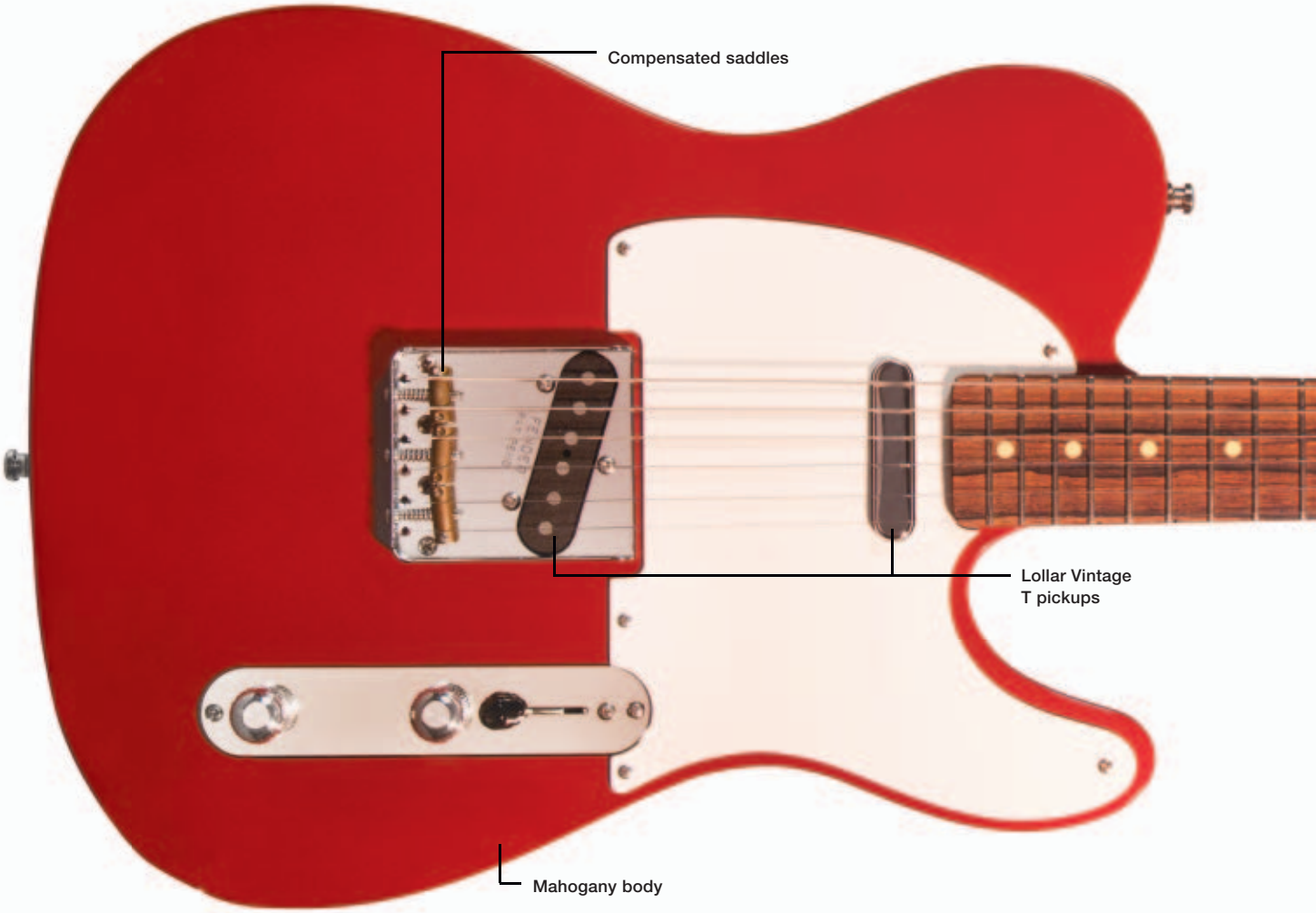
About 30 miles north of Manhattan lies the sleepy village of Suffern, New York, which in the last few years has become a hotbed of T-style-oriented activity. Whether the local townspeople are aware or not, Chihoe Hahn, a pious student of the legendary instrument, is producing fine T-styles right there under everyone's noses. Hahn's guitars have earned accolades from some of the baddest players and Telecaster devotees in the country—including Redd Volkaert, Elliot Easton, Jim Campilongo, and Walter Becker. Now that he's established as a builder to be reckoned with, he's applied his deep knowledge of classic '50s bolt-ons to something new—the all-mahogany Model 1229.

Hahn has huge respect for the innovations Leo Fender made decades ago (he says this is why he sticks to model numbers as names for his instruments), and he reportedly went to great lengths to get the 1229 up to a level where it could sit proudly beside its more traditionally constructed forebears. He also says that giving the 1229 its distinctly bright, sweet voice required careful experimentation with body thickness, hardware, and electronics. Hahn's efforts with the guitar have been well-received so far, and we were excited to get one for evaluation.

CLICKHere...
to hear audio clips of the guitar at premierguitar.com/aug2012

Subtle Surprises

The 1.5"-thick mahogany body was inspired by a vintage Melody Maker whose relative thinness offered great pitch-shifting ability by pushing or pulling on the neck. To take the recipe one step further into Gibson territory, Hahn added a mahogany neck with a rosewood fretboard to give the guitar a less percussive attack with more sweetness and bloom.



The 1229 is feather-light and well balanced, sitting a bit closer to your body when seated than a standard T-style guitar, which made the initial out-of-the-case experience very comfortable. Evidence of high-level craftsmanship was evident everywhere. Locked into place with an extra-thick plate, the neck fits the body snugly, with absolutely no wiggle room. Finish work on the frets and nut was immaculate, as was the thin dakota red-like finish—which looks beautiful against the toasted look of the mahogany on the back of the neck. The neck's medium-to-slim C shape is hand-carved and similar to an early-'60s Fender profile, with just enough shoulder to make for comfy thumbed bass notes. For hardware, we get Hahn's custom-made, heavily knurled knobs, a standard vintage-Fender-style bridge plate, and compensated saddles for flawless intonation. And after running through all the options, Hahn matched the 1229 to a set of Lollar Vintage T pickups.

A few acoustic strums will let you know what this guitar is about—woody resonance and a sweet, bright voice. The Hahn plays loud acoustically, and this, combined with the comfort factors mentioned above, make it a great couch guitar. You can feel satisfying vibrations throughout the thin body plank and up through the headstock. At first I thought the use of mahogany would result in a dark, mellow overall character, but the 1229 had a refreshingly live, silvery voicing that translated beautifully when amplified.

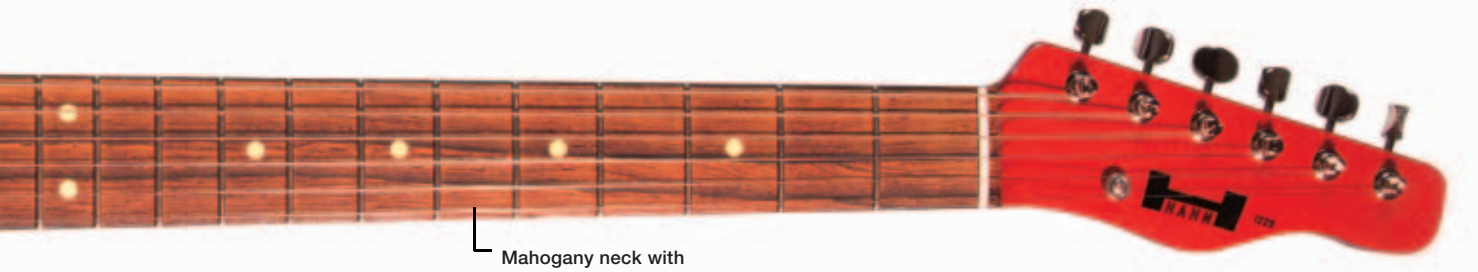
Thanks to the all-mahogany body, I got a nice range of singing, Gibson-like tones as I rolled back the tone knob a bit.

Letting the Bird Sing

A Fender Champ tells no lies, and as soon as I picked the open low E and A strings I knew the Hahn was going to deliver serious musicality. The Lollar Vintage T neck pickup sounded unmistakably Tele-like, with a more prominent midrange and a slightly more taught low end than usual. But the harmonic overtones were so pronounced and complex that I knew something else was going on—a subtle sponginess and delay in the attack made the notes feel like they were taking off. It was a blooming, piano-like effect that gave fierce low-register bluesy riffing a surprising energized zing. Where a good ash or alder Tele has killer impact and percussiveness on the lower frets, the 1229 had a softer attack, with more thickness behind each note.

When I switched to the middle position for some funky slides and double-stops higher on the neck, they shot off the fretboard with airy elasticity. Jazz-on-a-Tele fans should take note—all the definition you'd expect from a T-style instrument was there, just with less stab and more midrange sweetness. I cranked the amplifier's volume and the guitar was right at home doing crisp but rude country tones, as expected, with impressive sustain and body right up to the neck joint.

The same held true when I switched to the bridge pickup, which offered ringing twang that ranged from crystalline to angry and grinding as the amp broke up. Thanks to the all-mahogany body, I got a nice range of singing, Gibson-like tones as I rolled back the tone knob a bit. Make no mistake, this is not a mellow instrument, but one with juiced up sustain and a particular bloom that makes it more ideal for higher gain settings than your standard T-style guitar. Kicking on an Ibanez TS808 Tube Screamer and rolling back its tone knob gave me killer Les Paul Junior-like crunch, and though the guitar has load of cutting metallic edge on tap, I could get some pretty creamy lead tones—even out of the small Fender combo. The 1229 is a versatile, rock-friendly instrument—I couldn't stop ripping through the Georgia Satellites' "Keep Your Hands to Yourself" solos.



Mahogany neck with rosewood fretboard

RATINGS

Hahn Guitars Model 1229, $2,600 list, hahnguitars.com

Pros: Versatile and unique, all-mahogany take on the T-style voicing. Super comfortable to play.

Cons: Somewhat pricey.

Tones	5
Versatility	5
Build	5
Value	4.5

The Verdict

From clean, hyper-articulate chord work to smile-inducing nastiness, the Hahn Model 1229 has all the simplicity and tonal purity I love in a boutique T-style guitar—but with some basic design changes that give a classic platform a new and useful sonic signature. It won't replace your favorite Tele tones, but it supplements them with a uniquely rich and controlled voice.

4 AFFORDABLE RESONATORS GRETSCH, RECORDING KING, WASHBURN, AND WECHTER

We take a look at four sub-$1,000 offerings to help you find the right fit for dipping your feet into the resonator pool.

BY PETE MADSEN

Almost nothing evokes the sounds of the Mississippi Delta quite like a bottleneck slide dragged across the strings of a resonator guitar. National introduced the resonator to the world in 1927 with their single and tricone guitars. And blues pioneers like Son House and Bukka White used their National resonators prodigiously, churning out Delta gems like "Death Letter Blues" and "Aberdeen Mississippi Blues." The first Nationals were made from brass. Then, in order to accommodate more budget minded musicians, they produced all-steel versions such as the Duolian.

A few short years later Dobro followed with their spider cone resonator guitar, which became many bluegrass musician's go-to box. Dobros differed in sound and construction. The spider cone lent a nasal honk to the sound, and many Dobros used wood back and sides. Today a new National will run you over $2,000 and the Dobros (now produced by Gibson) are well over a $1,000. So where does a musician on a budget go to get that Delta vibe? Thankfully, several companies are putting out resonator guitars that the rest of us can afford. Many of these instruments play and sound great and you don't have to go too far to find a guitar for under a grand that will get your mojo working!

We checked out four guitars all priced close to or under $1000. Each has a wood body and some version of a spider cone. And though the spider cone tends to be more associated with bluegrass musicians and square neck dobro players while the biscuit bridge and tricone resonators of National guitars are associated with blues and Hawaiian players, there is a lot of crossover. And in this review we will focus the playing on blues and slide guitar.

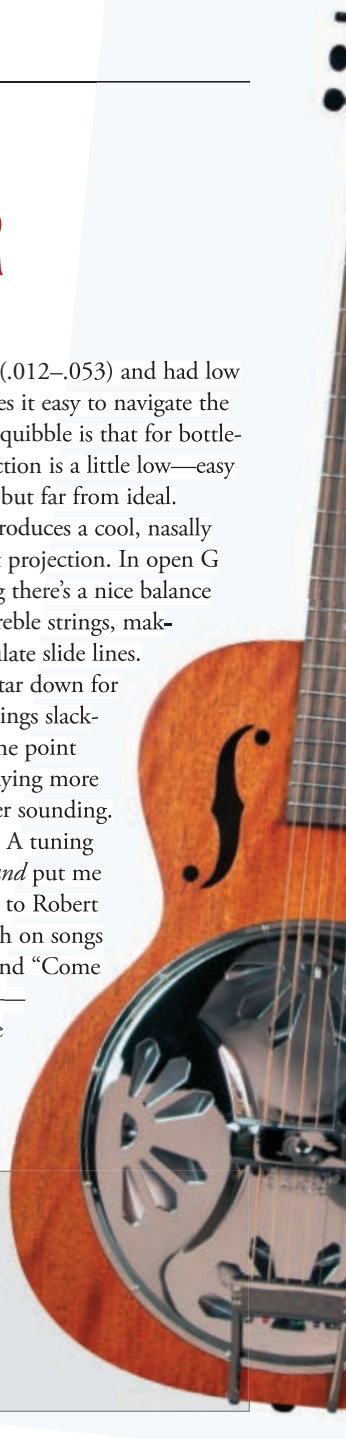
GRETSCH G9200 BOXCAR STANDARD

The Gretsch Boxcar is part of the company's new Roots Collection, which includes banjos, ukuleles, mandolins and guitars based on styles used before the 1950s. And a visit to the company's sepia-toned web page reveals that they mean business when it comes to their vintage agenda.

The Gretsch is feather-light and vintage styled from its aged pearloid headstock to the soft V-shape of the neck. The body, back, and sides, are built from laminated Mahogany and feature twin f-holes on the top, while the neck is mahogany with a rosewood fretboard. But the heart of the Gretsch is the resonator, which Gretsch has dubbed the Ampli-Sonic and built from 99% pure aluminum that is hand spun in Eastern Europe. Black, open-gear Grover tuners are an attractive addition. And the only construction flaw I could detect was a spot of underspray around one of the f-holes.

The soft V neck is very comfortable and evokes the feel of a vintage Martin. The guitar I received was set up with D'Addario light gauge strings (.012–.053) and had low action, which makes it easy to navigate the fretboard. My one quibble is that for bottleneck playing the action is a little low—easy enough to correct, but far from ideal.

The Box Car produces a cool, nasally honk and has great projection. In open G and open D tuning there's a nice balance between low and treble strings, making it easy to articulate slide lines. But tuning the guitar down for open G and D tunings slackens the strings to the point of making slide playing more difficult and buzzier sounding. Tuning up to open A tuning resolved the issue *and* put me in closer proximity to Robert Johnson's slide pitch on songs like "Crossroads" and "Come on in My Kitchen"—tunes on which the Gretsch sounded pretty sweet.



RATINGS

Gretsch G9200 Boxcar Standard, $599 street, gretsch.com

Pros: Light weight. Cool vintage vibe.

Cons: Needs extra fine-tuning for satisfactory slide tones.

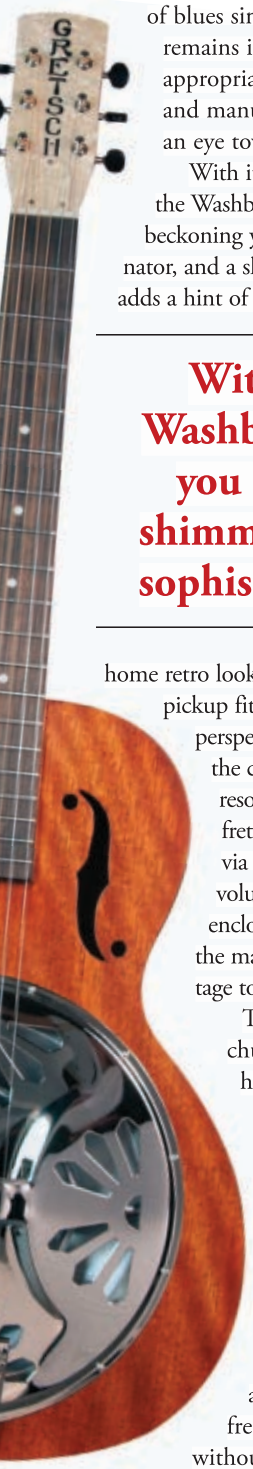
Tones	3.5
Playability	4
Build	3.5
Value	4

WASHBURN R15RCE

CLICKHere...
to hear audio clips of the guitars at premierguitar.com/aug2012

The Washburn brand has been a presence in the guitar industry off and on for more than 120 years. Given that the company was originally based in Chicago—a hotbed of blues since the late 1920s—and remains in Illinois to this day, it's appropriate that Washburn designs and manufactures instruments with an eye towards vintage blues vibes.

With its single f-hole and cutaway, the Washburn R15RCE has a way of beckoning you to play. It's a lovely resonator, and a shimmering tobacco sunburst adds a hint of sophistication to the down home retro look. The lipstick tube-style pickup fits right in from a styling perspective—sitting right between the chrome-plated spider-cone resonator and the end of the fretboard—and it's controlled via two knurled knobs for volume and tone. Grover-style enclosed tuners help complete the marriage of modern and vintage touches.



The Washburn has a slightly chunky U-shaped neck that helps offset the cramped feeling of the narrow string spacing at the nut. The neck is designed for averaged sized hands, and I had a little difficulty fretting cleanly with larger hands. Like most of the guitars it was setup with light gauge strings and low action. And the frets are neatly dressed and without rough edges or snags.

Playing slide proved both rewarding and frustrating. The setup on the low strings is a bit higher than the treble strings, so much that my slide kept striking the frets on the treble strings for using a less-flat slide angle.

Like most guitars with spider-cone resonators, the Washburn has a noticeably nasal honk, albeit with more accents on the low-mid side of things. This produces a punchy tone that is ripe for bluesy slide excursions. Cruising through classic lines in open A and open E highlighted the clarity of the single string runs, as well as fully barred chords. In standard tuning, the bass was a bit muddy for fingerpicked blues and strumming. Instead the Washburn is more responsive to a lighter touch and lighter attack evens the response. This can be a drawback if you tend to be a spirited picker who likes to pound the strings—and many blues players are. But for a songwriter with a more sensitive style that's looking for a bluesy vibe this could be just the ticket.

With its single f-hole and cutaway, the Washburn R15RCE has a way of beckoning you to play. It's a lovely resonator, and a shimmering tobacco sunburst adds a hint of sophistication to the down home retro look.

The pickup faithfully reproduces the acoustic sound of the instrument, although it doesn't have a lot of volume. You can remedy this by adding a DI box with volume control or simply rely on your amplifier/PA for more punch.

RATINGS

Washburn R15RCE, $449 street, washburn.com

Pros: Very affordable and handsome entry-level resonator.

Cons: Muddy tones when played hard.

Tones	3
Playability	4
Build	3.5
Value	3

RECORDING KING
RR-50-VS

When you think of guitar history the words Montgomery Ward don't necessarily come to mind right off the bat. But in the period between the first and second World Wars, Gibson manufactured guitars for the venerable retail chain that were sold under the Recording King brand. The early Recording Kings were great guitars that sold at a fraction of the cost of the more expensive Gibsons. Given that most average blues musician couldn't afford a Gibson—even if Robert Johnson was pictured with one in that infamous photo—and the fact that the Montgomery Ward catalogue was a fixture throughout the South you realize that these instruments probably produced a lot of great blues.

Fast forward to the present and the Recording King name is again adorning guitars with a pre-war vibe—from dreadnoughts to 000s, Gibson-esque L series and resos like the RR-50. This Recording King substitutes screened sound holes for f-holes, which gives it a "buggy-eye" look. And when combined with the spider cone resonator and saddle cover it looks a bit like a robot face staring back at you. The deep tobacco-burst lends a subtle touch of class, as does the crown atop its headstock and the Grover butter bean tuners. In general, the craftsmanship is very solid.

The RR-50 comes set up with slightly higher action than the other guitars, which is better for slide playing but still really comfortable for normal fretting, strumming, and single string runs. The narrow (1 11/16") nut width made it a little bit tight for my hands. And since the neck joins the body at the 12th fret and the heel of the neck block projects out slightly more and makes it a challenge to navigate around the 12th fret.

The RR-50 projects warmth and attitude. It shows a strong and balanced volume between bass and treble strings, and the clarity you hear when you strum hard is as pronounced as when you attack it like a fingerpicker.

The RR-50 projects warmth and attitude. It shows a strong and balanced volume between bass and treble strings, and the clarity you hear when you strum hard is as pronounced as when you attack it like a fingerpicker. Needless to say, it has the same spider cone honk as the other guitars. But it's less muddy than most resos in the price range, and you get a cool, bossy growl from slide runs on the bass strings, and nice bell-like tones on the treble side. Together, the blend works best in the lower registers of D and G tuning.

The RR-50 is really suited to serious slide action. The feel and response lends themselves to slackened open tunings. But this would be equally at home for a strummer/songwriter who wants a punchy tone. Recording King has done an outstanding job of making this sound like a more expensive instrument.

RATINGS

Recording King RR-50-VS, $450 street, recordingking.com

Pros: Great, balanced sound for a budget price.

Cons: Neck a bit small for big hands.

Tones	4.5
Playability	3
Build	3
Value	3.5

WECHTER
RS-6610FC

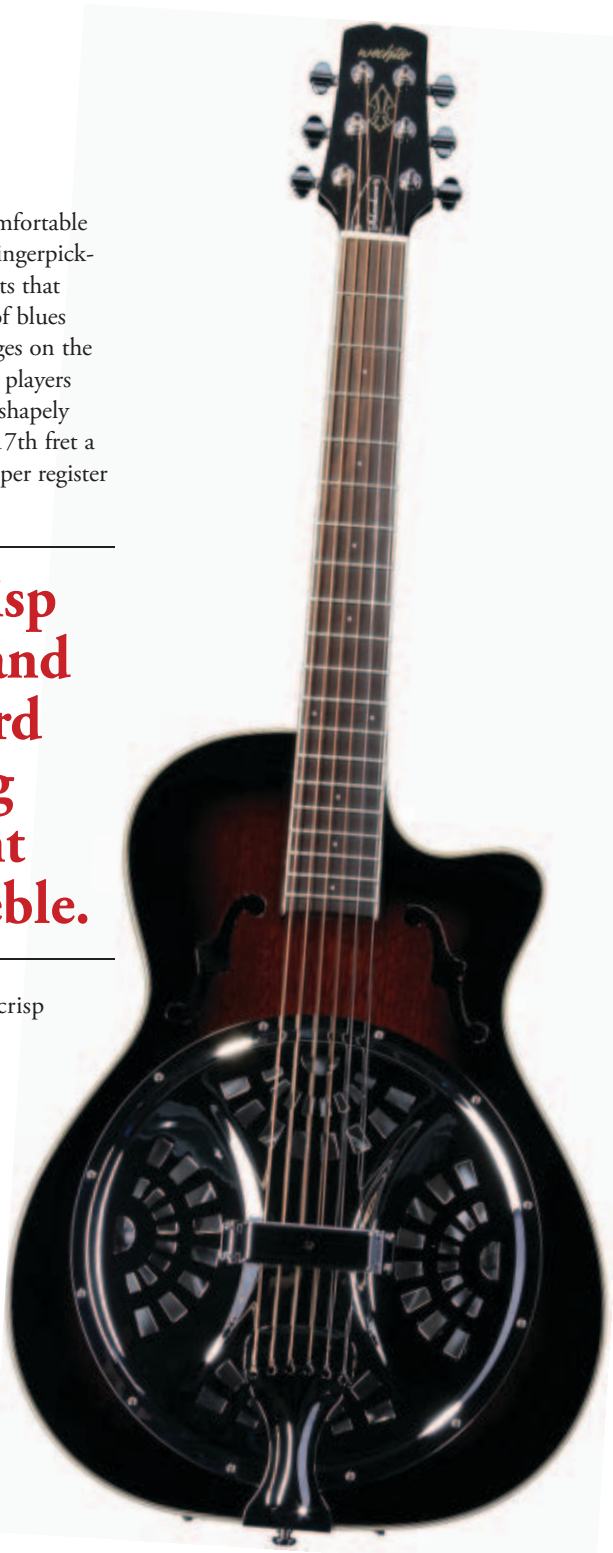
Abraham Wechter has been making guitars for over 30 years including a stint with renowned luthier Richard Schneider in Detroit. And the Wechter RS-6610FC reflects the sense of style and function that's born of that experience and typifies much of the Wechter line. Wechter's spider cone resonator has a pretty tobacco sunburst finish and a very cool, almost Les Paul-like cutaway and two f-holes.

Cream-colored ABS binding accents the dark sunburst very nicely and the butterbean tuners are a nice vintage touch. Wechter designed the non-cutaway side of the upper bout with a slightly sloped shoulder that makes it a bit more comfortable to hold. And in general, it's an elegant and subtle package. Craftsmanship is solid and the instrument is free of visible flaws.

The Wechter was sent with D'Addario medium gauge strings (.013–.056), and it plays very evenly up and down the neck. A slightly wider (just a shade under 1 ¾") nut and string spacing made this guitar very comfortable for strumming, flatpicking and fingerpicking, and the heavier setup suggests that Wechter understands the needs of blues players. The absence of sharp edges on the frets and a setup that favors slide players made this a joy to play. And the shapely cutaway makes access up to the 17th fret a breeze, which facilitates sweet upper register slide work.

The Wechter is cutting and crisp sounding. Strumming chords and fingerpicking blues in standard tuning yields clear, sparkling midrange tones with excellent separation between bass and treble.

The Wechter is cutting and crisp sounding. Strumming chords and fingerpicking blues in standard tuning yields clear, sparkling midrange tones with excellent separation between bass and treble. Slide workouts in A tuning sounded punchy and resonant, and in total the Wechter sounds exceptionally focused, demonstrates a great volume range and responds to heavy or light attack with equal aplomb.



RATINGS

Wechter RS-6610FC, $825 street, wechterguitars.com

Pros: Great separation between bass and treble frequencies. Very balanced and clear sounding. Stylish.

Cons: Aesthetics may not appeal to purists.

Tones	4.5
Playability	4.5
Build	4.5
Value	4

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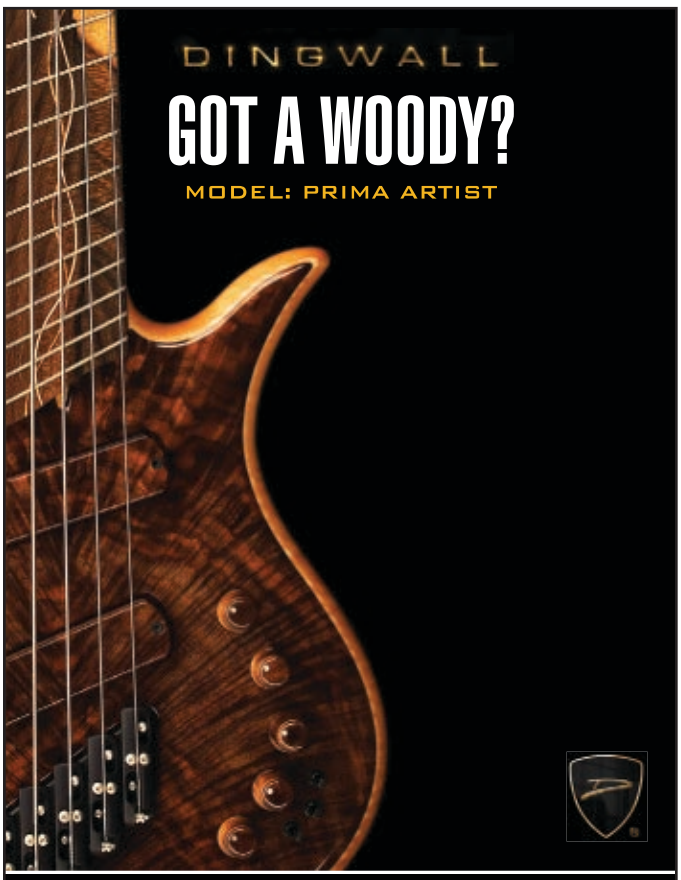


www.dingwallguitars.com

WREN AND CUFF CAPRID

BY CHARLES SAUFLEY

The art of stompbox cloning is, at *best*, an inexact science. A lot of the most classic pedals vary wildly from specimen to specimen—mocking that pillar of empirical science, the control set—and making a definitive version of just about any classic a near impossibility. This certainly holds true for the Big Muff. And it might be doubly true for the mid-'70s Ram's Head version that legions of fuzz fanatics regard as the finest Muff of all.

Yet the manufacturing inconsistencies that make vintage Ram's Head Muffs such a mixed bag has not deterred stompbox builders from attempting to make the ultimate Ram's Head clone. And if there is such an animal, Wren and Cuff's Caprid is right there in the running for the title.

Running with the Sheep

It's no secret why the Ram's Head Big Muff is as revered as it is. It's the cornerstone of some of David Gilmour's most famous solos, the vehicle for Ernie Isley's soul-fuzz excursions, and the foundation for J Mascis' skull cap-ripping live sound—which is to say they can sound colossal, smooth, aggressive, responsive, squirrely, and just about everything in between.

Wren and Cuff, who have already kicked up waves with their Sovtek-type Muff clones like the Tall Font Russian, demonstrate uncommon reverence to these iconic Muffs of yore in building the Caprid. The enclosure is a dead ringer for an original at a few paces, and it's resplendent in playful and vintage-inspired touches like the little ram head logo in the lower right hand corner and use of the Art Nouveau Böcklin font. It also feels like a sturdy little brick in hand—which inspires all kinds of faith in actually stomping on this stompbox.

The period-correct touches on the exterior only begin to tell the tale of how reverent this design is. The tone control works in reverse, just like the original, which means you (very counter-intuitively) crank the tone with a counterclockwise turn, while you boost the volume and sustain with a more familiar clockwise turn. The on/off switch is a faithful touch that also serves a practical purpose—you can turn the pedal off, leave your cables plugged in, and not drain your 9V battery.

CLICKHere...
to hear audio clips of the pedal at premierguitar.com/aug2012

When it comes to period authenticity, however, the pièce de résistance is the printed circuit board, which retraces the 3003 circuit board in the original Electro-Harmonix Ram's Head Muff—right down to the wide copper traces. It's indulgent, it's impractical, it's probably expensive—and if you're a major circuit nerd, it's nothing short of glorious.

One aspect of the Caprid's design where Wren and Cuff was willing to deviate from vintage exactitude is the transistors themselves. After excitedly sourcing a rather pricey stash of 2N5133 transistors, Wren and Cuff owner Matthew Holl determined that the whole batch sounded altogether underwhelming. So rather than bow to to-the-letter authenticity under the hood, Holl adopted a mix-and-match approach to transistor sourcing—with rather stunning results, as it turns out.

One Heavy Muffin

The differences between Big Muffs and Big Muff clones can be subtle. But the Caprid succeeds in being extraordinarily creamy and smooth by any Big Muff standard. It also has a lot of range for a Muff-type pedal.

If you set up the Caprid for unity gain (which, very authentically is right around 2 o'clock) and set the sustain and tone at about noon, you'll get a sweet, thick, sustaining lead tone that coaxes a very vocal fuzz and grind from a larger amp like a Fender Twin without getting unmanageable, but also sounds gorgeous through a smaller rig like a Fender Deluxe. At these relatively mellow settings you can still use the tone and sustain controls very effectively to dial up more aggression—and with smaller amps in particular, a sweet, buzzing '60s-flavored fuzz that you can transform from singing Page/Beck Yardbirds tones to more radical beehive garage menace.

With the volume at unity, and the tone and sustain at about 2/3 full, the Caprid is great for heavy chording. But it goes way beyond just being useful for I-V power chords, as the pedal retains detail for arpeggios and complex chords

at the low end of the fretboard where other Muffs can get mired in muck.

Cranking the volume all the way—a setting preferred by many Ram's Head users—does nothing to blunt the Caprid's capacity for detail. Even when you roll the tone knob all the way *off* at these heavy levels, the Caprid remains focused and incredibly rich with overtones and color. With volume and tone at these opposite extremes, the sustaining, savage growl of a barred F chord run through a blackface Fender is easily among the most delicious distorted tones I've ever heard. And there aren't many fuzz pedals—of any type—that can swing that trick.

The tone knob, meanwhile, is beautifully reactive and effective. Cranking it wide open and going full throttle on the sustain and volume uncages a fire-spitting monster that's at once deadly, blindingly beautiful, and full of intricacies. You can move from singing and stinging lead tones (that sound particularly smooth with neck pickups and humbuckers) to fast chord arpeggios that retain amazing note-to-note balance. Roll the sustain back a bit and plug in a Stratocaster and you have the combination of tooth and sustain that's typical of Gilmour's *Animals* tone—perhaps the definitive Ram's Head lead tone.

RATINGS

Wren and Cuff Caprid, $279 street, wrenandcuff.com

Pros: About as smooth a Muff-type pedal as you'll hear. Lovingly built. Works incredibly well for big chords. Great sustain.

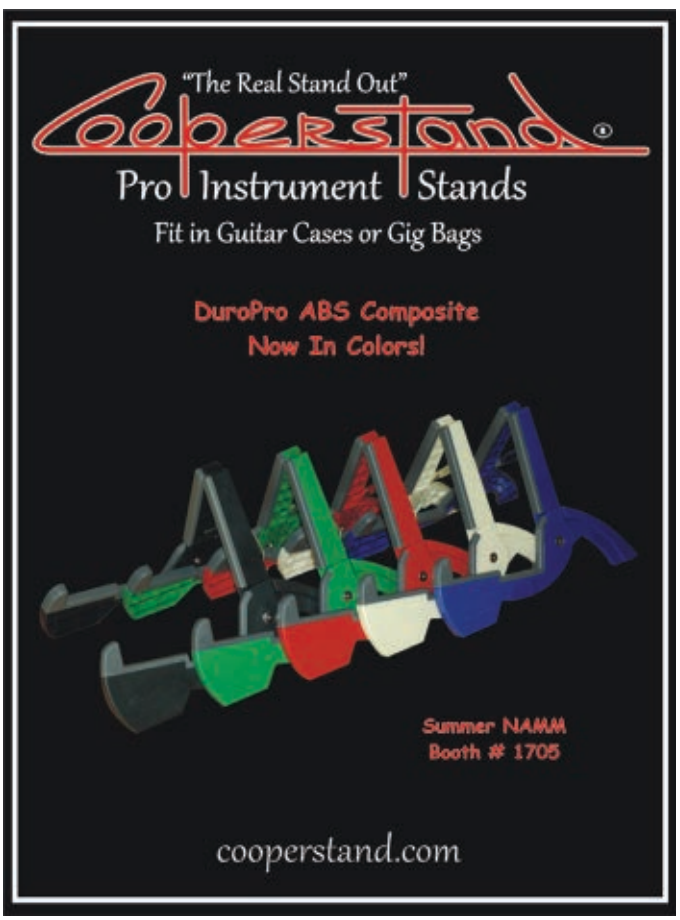
Cons: Authenticity comes at a price.

Tones	♥♥♥♥♥
Ease of Use	♥♥♥♥½
Build	♥♥♥♥♥
Value	♥♥♥♡♡

The Verdict

Unless you're willing to brave the vagaries, risk, and expense of the vintage Muff market, the Caprid is about as complete as a classic Ram's Head experience as you can get. The pedal is built like a battleship and Wren and Cuff nailed the design idiosyncrasies that made old Electro-Harmonix the coolest-looking pedals in the shop.

Whether the Caprid captures *the* perfect Ram's Head tone is impossible to say, given the unique voice of each original. But the Caprid is a spectacular-sounding fuzz by any criteria. It's capacity for note-to-note detail—even when chording in the most extreme gain settings—is extraordinary. Lead tones are classically Ram's Head—singing, aggressive, and responsive to varied input from a guitar's volume and tone controls—and snarling and savage enough to get out over a raging maelstrom of drums and bass. If there's a drawback, it's that you're not likely to get a Caprid on the cheap. And at 279 bones, less obsessive Muff fans might find the Caprid too much for a relatively simple circuit. But Muff fans that savor the design elegance and civilized-to-savage personality of the best vintage Ram's Heads are bound to be thrilled by what the Caprid can do—and consider this lovingly crafted homage a bargain.



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SCARLETT BASS 200

BY JORDAN WAGNER

Although guitardom had a brief fascination with solid-state designs around the advent of the transistor, since then the mighty tube has reasserted its authority in 6-string realms and the evolution of solid-state amplification has primarily come as a boon to bassists. But before all that—back in the first heyday of loud rock and blues—bassists had to have rigs that could not only keep up volume-wise with the rest of the band, but also have enough clean headroom and power to fill the space between the instruments. And good grief, some of those rigs weighed a *ton*. Because those amps used tubes in their power sections, massive and heavy transformers were required to provide the juice needed to keep everything regulated and powerful. Of course, back then tube amps were still in their infancy, and reliability issues were even greater than tube aficionados have to contend with today.

Yet, as we all know, nothing sounds quite like a bass through a good tube amp. Scarlett Amplification understands this, and has recently introduced the Bass 200 into their guitar-oriented line of handbuilt, all-tube designs.

CLICKHere...
to hear audio clips of the amp at premierguitar.com/aug2012

A Knight in Shining Tolex

The Bass 200 is truly a thing of beauty. The "white knight" garb of the birch-plywood cabinet has a bit of an industrial look reminiscent of amps like the Matamp GTO 120 or the Orange OR80. While many amps with this type of build and look are pretty hefty, Scarlett's tube-powered darling clocks in at just a hair below 45 pounds. And its pair of top-mounted leather handles allow for easy moving without feeling like a lead weight is pulling on your shoulders.

Scarlett used their rackmount bass preamp as a starting point for the Bass 200's circuit, essentially just adding an output stage and packing the innards in the same chassis as their 50-watt guitar amps. Inside, the turret-board circuitry is expertly handwired and relies on a quartet of JJ KT88 power tubes to generate 200 watts at either 4 or 8 Ω. The preamp—which is shaped by pre-gain, treble, mids, bass, and mid-shift knobs—uses three JJ ECC83S preamp tubes working in tandem with a new-old-stock RCA 12BH7A long-tail phase inverter. One other cool thing is that the EQ was designed to have a pretty big low-frequency response at lower volumes, just in case you don't want to blow the roof off the joint at your gig or practice session, but still want the lows to really fill the room in a natural way.

The mids and lows can be tailored via the 6-position mid-shift knob, which is pretty handy for voicing the amp for the particular bass and cabinet being used. The control also makes it easy to stay in the same tonal ballpark when quickly changing basses and helps round out the sparse set of features. If you're looking for amenities like an effects loop, wattage selector, or a footswitchable boost, you're out of luck with the stock model. Luckily, these options can be requested as custom features by contacting the company directly.

Headroom for Days

Scarlett amps are primarily known for having very smooth tones, especially when they approach the breaking point of a power-tube workout. I realized the Bass 200 was no exception after spending several days running it into a vintage Ampeg Isovent 2x10 and 2x15 combo cab and playing a Kramer Striker bass. The way the Bass 200 filled my practice space with smooth, velvety lows and rounded, punchy highs

was awe inspiring. At low volumes, each note I picked belted out of the cab with an immediate, quick attack and lows that were tight as a drum. As I turned up the pre-gain and loudness (master volume) knobs, the amp took on a beefier, more expansive stature while relenting slightly in its mid-heavy onslaught. This balancing out of the tone helped my bass' onboard controls react more effectively and allowed me to go from clean and driving Geddy Lee-type tones to burly southern rock sounds without touching the amp's controls.

The mid-shift control was pretty effective at shaping the amp's unique midrange response, which tends toward the meatier side (imagine the midrange of a Marshall Major crossed with the smooth power section of an early-'70s Ampeg SVT). The first couple of mid-shift positions reigned in the subs when the low end got too heavy for certain volumes—all it took was a quick flip of the mid-shift knob and a slight adjustment of the bass knob to rope them back in.

If you're thinking the Bass 200 is capable of serious overdriven grind because it has a preamp gain control, you're just as wrong as I was when I made that assumption. There's a large amount of headroom on tap, even with the control cranked. Pushing the amp hard like this and hitting the Kramer's strings with more force than usual didn't really cause the preamp to break up anywhere near as much as you'd expect, and certainly not in a way that would be considered raunchy and saturated. Rather, the preamp control was more useful as a tool for changing the overall EQ response. Setting pre-gain above 1 o'clock softened and warmed up the sound, which was nice for jazzier playing that called for more dynamics and low-end detail. Conversely, lower settings helped the amp dish out crispier tones for progressive and funk styles.

The way the Bass 200 filled my practice space with smooth, velvety lows and rounded, punchy highs was awe inspiring.

Given that, it's heartening to find out that the Bass 200 was designed to take to overdrive and fuzz pedals extremely well. If you love the sound of an Electro-Harmonix Big Muff coating your low-end rumble but hate that it usually comes at the expense of low end, you should be quite pleased with how one sounds through the Bass 200. Maxing a Big Muff's fuzz treated me to a wall of grind so full of blistering mids and heaving lows that even the most jaded stoner-metal fan would turn down his Electric Wizard record to take a closer listen.

The Verdict

For smooth, tube-infused bass tone that can perform well in several musical situations—and at varying volume levels—the Bass 200 is hard to beat. Its ability to fill a room at low levels makes it a great choice for studio cats, and the tones it can produce when pushed into oblivion are even more impressive—though not as overdriven as one might expect considering the amp's tube topology. As a stock model, it doesn't have much in the way of bells and whistles that a lot of bassists consider indispensible, but if you're looking for a workhorse that will haul huge loads of satisfying low end, the Bass 200 is well worth checking out.

RATINGS

Scarlett Amplifiers Bass 200, $2,100 street, scarlettamps.com

Pros: Smooth tonality. Great tone at low and high volumes. Solid build. Tons of headroom.

Cons: Stock features are pretty bare bones.

Tones	4.5
Versatility	4.5
Build	5
Value	3.5

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FLOORBOARD MULTI-EFFECTS ROUNDUP: FENDER MUSTANG FLOOR, BOSS GT-100, AND ZOOM G5

BY JORDAN WAGNER

For most guitarists, multi-effect units are a mixed bag. While the benefits are obvious and the idea sound, a lot of affordable multi-effectors end up jack of all trades and master of none. More than a few readers have probably gone the affordable multi-effector unit thrilled that it could move from Dimebag Darrell tones to some crazy ring modulator with the flick of a switch—only to grow tired of the shrieking, icepick tones, cold tonality and inability to cut in a band setting.

But floorboard multi-effects units have come a long way since you found that cheap, $100 plastic box of bees beneath your Christmas tree. More processing power, ever-shrinking digital circuitry, and economical production make today's floor board multi effects units more compact, capable and affordable than ever. And the new generation of multi-effectors overflow with accurate vintage amps and effects models, simple and streamlined recording options and musical possibility.

We wanted to take a good look at just how far these devices have come in recent years, so we decided to have a go with three popular floorboard multi-effectors—the Fender Mustang Floor, Boss GT-100 and ZOOM G5. We heard drastic improvements in modeling technology and encountered some digital limitations. But while there's room for evolution, each of these floorboard multi-effectors is a capable tool for guitarists that need a little bit of everything, whether on stage or in a recording situation.

BOSS GT-100

Boss has been a major player in the multi-effects game for decades. So they've had a lot of time to research and deduce how to design a floorboard that combines versatility, tone, and ease of use. The GT-100 is the follow up to their popular GT-10 processor, but it's much more than just a simple update from its previous model. All of Boss's COSM amp and effect models have been completely redesigned and reengineered from the ground up—along with new amp models—and the rig is driven by a new, higher-horsepower DSP chip that's designed to replicate the nuances and tonal intricacies of the amps and effects that it models.

Simply put, there's a *lot* going on underneath the GT-100's hood. Each patch begins with one of 25 different amp models that range from the cleans of a vintage Fender Twin Reverb to warm leads influenced by the Mesa/Boogie Mark series and late '60s Marshall Super Lead, and the raging drive of a Mesa/Boogie Dual Rectifier, Peavey EVH 5150, and Soldano SLO-100. Eight of the amp models are custom models built by the engineers at Boss, and serve up tones that the company claims are either difficult or impossible to achieve from standard tube amps—such as a high-gain stack model that smoothes out common uneven frequency response and a Marshall-influenced overdrive that's been remodeled for more punch and smoothness. Each model can be combined with a chain of 51 effects, ranging from delays, reverbs, distortions and overdrives, modulators, and some pretty zany-sounding pitch shifters. What's more, you can set up to 12 of these effects to run in any order before or after the amp model, and also split the signal into two separate feeds for thickening up the tone—essentially building a virtual dual-amp rig. Top this off with an easily accessible looper, dual-mode switching for both amps and effects, an assignable expression pedal, and a plethora of connection options—including USB in and out for direct recording and patch configuration—and the GT-100 adds up to a formidable recording and performance unit.

As intimidating as the GT-100 looks, I really had no issues getting to know the operating system and finding what I was looking for. This is, without a doubt, one of the easiest-to-use floorboard processors that I've come across in a long time. After connecting the unit to my iMac via USB and plugging in an Ibanez JS-1000, I started playing with the first bank of pre-programmed patches—which sounded good, if occasionally uninspiring. They are good stepping stones from which to work with the unit's other features, however.

Figuring out how to immediately adjust the drive and EQ levels is a snap because Boss was smart enough to include them as immediately adjustable parameters from the pedal's bright, dual LCD screens. If the amp model has a second channel, a turn of the assigned knob below the screen instantly flips you to the core settings of that channel, and it's easy to save settings by simply tapping the WRITE button and setting the basic save parameters, such as the name, where you want to save it, or which patch you want to replace with it.

Setting the effects chain was a breeze, too. After pressing the EFFECT button, the dual screens light up with the chain on the left, and the selected effect's settings on the right. I normally like to put my EQ pedal after the preamp, so all I had to do was twirl the knob underneath the word SELECT on the effects chain LCD until I found the EQ effect and turn the MOVE knob until the effect dropped itself to where I wanted it in the chain. It's simple, efficient, and very little fuss.

Tone-wise, the GT-100 has its strengths and weaknesses. I found the mid-gain range of amp models to be more natural and full than the clean and blistering high-gain tones—unusual given how many modelers emulate the more extreme ends of the tonal spectrum best. Yet with the Ibanez and the GT-100, I had few issues dialing in fat, rounded overdrive with great body and definition—provided that I didn't turn the gain levels up too high. The flip side is that nearly all of the amplifier modes and distortion emulations exhibited some woofiness and congestion when pushed hard. Thankfully there's a workaround—setting up a dual-amp rig with less amounts of gain set for each one.

On the other end of the scale, I was able to coax some pretty nice cleans from the GT-100's array of amp models, especially from the Vox AC30 and highly-accurate Roland JC-120 models. Each was fairly sensitive to changes from the guitar's volume knob and reacted accordingly by smoothing out the highs and mids.

This is, without a doubt, one of the easiest-to-use floorboard processors that I've come across in a long time.

If you make extensive use of effects, the GT-100 is an absolute monster. Overdrives and boosts reacted accurately to most of the amp models—delivering more grit and drive and a rounded midrange. Modulation effects ranged from cool and conservative choruses to stunning, synthetic soundscapes (Seriously, try running a mix of the Slicer and Pitch Shifter into a ton of reverb. It's amazingly ethereal). The heavier distortions and fuzz models sounded good when set more conservatively, but were rather difficult to keep defined at more aggressive settings.

The Verdict

Boss's GT-100 is certainly a positive evolution of the GT-10. It has limitations—most notably if you're a heavy player that uses a lot of extremely distorted settings. That limitation aside, it's an immensely powerful tool for shaping your tone, has excellent mid-gain and clean tones and most importantly, reacts to your playing style and dynamic changes. And with the USB direct recording port and a myriad of connection options, and the GT-100 is one of the best options out there for the player who's looking for everything-but-the-kitchen-sink recording and performance multi-effector without the mess and hassle of complicated switching and routing.

RATINGS

Boss GT-100, $549 street, bossus.com

Pros: Tons of connection options. Great modulation effects and mid-gain tones. Reacts well to playing dynamics.

Cons: Extreme distortion settings sound congested and one-dimensional.

Tones	4.5
Ease of Use	5
Build	4
Value	4

FENDER MUSTANG FLOOR

The Mustang amp series has been a huge success for Fender—combining amp and effects modeling into affordable do-it-all amplifiers. On top of that, they're pretty simple to operate, featuring an operating system that has a shallow learning curve that appeals to novice bedroom guitarists and studio players that like to call up sounds fast. With the Mustang Floor, they've condensed the entire package into a rugged metal floorboard with a simple, clean layout.

The Mustang Floor's firmware stores a total of 13 amp models, more than half of which are based on Fender amps including the '57 Deluxe, '65 Twin Reverb, Super-Sonic, '65 Deluxe Reverb, and others. The other models are emulations tending towards Marshall classics as well as the Mesa/Boogie Dual Rectifier and Peavey 6505. Amp modeling can also be bypassed, just in case you want to use the floorboard as an effects unit with your amp, without the amp modeling coloring the tone. Effects-wise, the selection is much broader—packing in 37 fully-customizable effects that cover overdrive, wah, compression, delay, chorus, flange, pitch shifting, ring modulation, reverb, and several other effect types. The floorboard's expression pedal can be assigned to control pretty much any amp or effect parameter on the fly, making it possible to do things like gradually increase an amp's preamp gain or midrange, deepen reverb depth, or push a delay's repeat count into self-oscillating craziness.

Like the other two floor processors in this roundup, the Mustang Floor is designed to be connected, routed and controlled in a variety of ways. Two XLR outs and two unbalanced 1/4" outs are available to hook up the unit to a mixing board or amp input, and a dedicated USB port for direct recording and patch updating is an option for players who want to record direct without crisscrossing cables. A MIDI control, a built-in effects loop, an auxiliary in, and 1/8" headphone out are also part of the package.

The first thing about the Mustang Floor that stands out is how well-built it feels. The weighty floorboard's metal enclosure feels sturdy in hand, and solid under foot moving through its switches. The expression pedal felt a little tight, but is adjustable via a screw on the side. After turning on the device, running a USB cable to my iMac, and connecting an Ibanez JS-1000 guitar, I fired up FUSE—Fender's software for creating and altering patches for the Mustang series—plugged in my headphones, and ran through the initial patches. Right off the bat, it's apparent that Mustang Floor has the same tone and nuances that typify the Mustang amps—full-bodied cleans, and overdrive tones that often need a lot of tweaking.

First off, the Mustang Floor's emulation of Fender's classics like the Twin Reverb are pretty nice, despite missing some of their signature sparkle on the highs. Still, they are very responsive and balanced on the whole. The Deluxe Reverb model in particular had a very striking midrange punch, through it could occasionally sound just a touch cold and processed in mid-range-heavy applications—almost like hearing a great recorded tone played back from a mastered recording, which is actually a really nice thing if you're using the unit to record direct. Though if you're looking for the feel and skin-tingling snap of a great mid '60s Twin blaring behind you, the Mustang Floor routed through the house system isn't going to deliver all of the subtle nuances that an authentic rig would.

The unit's strength is the effects. And the Individual Stompbox mode that overrides the amp models so you can use the unit as a standalone effects unit is a really appealing function of the Mustang Floor for how good they are. The overdrives are smooth and highly tweakable, almost to the point where it's easy to apply *too* much of one control if you're not careful. Modulation effects are outstanding too—especially the excellent-sounding chorus and delay models, which add dimension when the tone is a bit flat.

The Mustang Floor is capable of crafting some seriously brutal distortion tones, in

RATINGS

Fender Mustang Floor, $299 street, fender.com

Pros: Great effects. Excellent build quality.

Cons: High-gain settings are bass heavy. Some models sound one-dimensional.

Tones	3.5
Ease of Use	4
Build	4.5
Value	4

addition to sitting pretty well in early '70s classic rock scenarios. Getting the low end to behave itself can be the biggest hurdle. When I stuck with the Marshall-influenced models it's relatively easy to keep clarity intact. In fact, cranking the preamp gain and dropping the Ibanez's volume control yielded some of the best blues-rock overdrive tones in the unit, most of which that also had a really responsive midrange snarl. Heavier tones were harder to reign in though, mostly because the low end that the Mustang's software generates for models with copious overdrive borders on the colossal—especially with the American '90s and Metal 2000 models. And even though the patches containing these models were great starting points, a lot have sub tones that can overpower the signal. In thrashier applications I had to keep the Bass down to around 10 o'clock or lower, just to keep it tight underneath the mids and treble frequencies.

The Verdict

The Mustang Floor can make you look and sound like a pretty resourceful guitarist. And it's a great deal too. The tones often reveal a digital edge, but the convenience, superb effects, and rugged build merit high marks. If you're a fan of the Mustang modelers—or just need a solid, portable modeler for quick direct recording or stage use—it's more than worth a look.

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ZOOM G5

The look and layout of ZOOM's G5 processor has more in common with a control panel on the Starship Enterprise than with the spare control layouts of the other two floorboards in this roundup. But what looks complex on the surface is all about ZOOM giving players more on-the-fly amp and effect adjustment possibilities, rather than placing the majority of those features in a series of scrolling menus. And compared to the other two processors in this roundup, the G5 has a lot more tools on hand—not just for producing and shaping tone, but assisting in songwriting and riff ideas too.

The G5 has a ton of emulated amps and effects—22 amps and a whopping 102 stompboxes. The amps cover pretty much what you would expect from most modelers—vintage Fender cleans from such hits as the Twin Reverb and Bassman, ballsy British crunch and cleans from a Vox AC30 and a handful of vintage Marshall emulations, and pummeling metal wallop from interpretations of the Mesa/Boogie Dual Rectifier and Krank Revolution 1. They could have stopped there, but ZOOM went a step further and filled the G5's amp coffers with some great boutique choices, such as the Diezel Herbert, Bogner Ecstasy, Carr Mercury, and Matchless DC-30, among others. And while the G5's emulated effects models are populated with common selections such as the Boss CE-1 and MXR Dynacomp, they also include a ton of custom models that are pretty unique, such as delays that are routed in tandem with reverbs, stepped sequencers, reactive resonance filters, and a bunch of other cool gizmos. There's even a separate footswitchable boost that uses a real 12AX7 tube to goose the output with tube warmth and feel. And the unit also includes ZOOM's 3D Z expression pedal, which not only senses up and down movement, but side-to-side as well—making it possible to control effects parameters in wildly different ways.

The G5 does a lot of things. Unfortunately, some of that feature richness comes at the expense of being intuitive. After connecting the unit to my iMac with a USB connection and plugging in an Ibanez JS-1000, I was able to call up the first four patches pretty easily, but switch to different banks required some in-depth consultation of the manual (not necessarily a bad thing).

User-friendliness aside, the G5 has some really neat tones wired into its circuitry. The clean amp models are great backdrops for building tones—especially the highly responsive '63 Vibroverb and '65 Twin Reverb models. Bloom and decay had a very real-world feel, and adding overdrive stompboxes had a very natural, sagging quality that was a blast to play with. However, digging into the strings harder—no matter which amp model that I was using—pulled back the curtain a bit so to speak, inducing as slightly cold-sounding digital edge on the high end frequencies. The modulation and delay effects are quite spacious and detailed, though the choruses and phasers in particular sounded a little less natural—almost as if they were stuck on top of the tone and left to modulate while the dry tone lay unaffected underneath.

The G5's British amp emulations were surprisingly accurate—capturing the sag and upper midrange bite that a lot of those amps are known for. The Marshall Super Lead model conjured up some very convincing '70s rock rhythm tones—perfect for laying down Angus Young-type pounding riffs with a decidedly bright and smooth attack. And as I laid back and let up on my pick attack to play bluesy leads, the model responded in kind with a cleaner, more organic tone that retained great high-end definition. Even higher gain models with boosted front end signal chains were nice and tight without being overly bass-heavy. Still, heavier tones sometimes caused some digital artifacts to show, mostly in the midrange and highs—and we're particularly noticeable when I would crank the Bogner and Diezel models to the levels where their real counterparts are thickest and most dynamic.

The Verdict

The G5 is a nice tool for recording and working out riff ideas, and has some very convincing amp emulations to boot. It can exhibit a digital edge, especially when using some of the modulation effects or coaxing out very high amounts of distortion. Regardless, it has the biggest feature set of the three models presented here, and while it has a steeper learning curve, its tonal capabilities and applications are impressive.

RATINGS

Zoom G5, $299 street, samsontech.com/zoom

Pros: Tons of emulations and effects. Great Marshall and Vox models.

Cons: Interface can be a bit cumbersome. Some amps and effects have cold tonalities.

Tones	4.5
Ease of Use	2.5
Build	4
Value	3.5

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MAD PROFESSOR
GOLDEN CELLO

BY TYLER GREEN

CLICKHere...
to hear audio clips of the pedal at premierguitar.com/aug2012

As far as stompbox names go, "Golden Cello" is a lot to live up to—evoking thoughts of singing, harmonically rich tones, muted heavenly light, and a prized relic from antiquity perhaps. There's just no way your mind's eye *won't* weave some very grand ideas about how it's going to sound.

In concept, the Golden Cello is aptly named. It's designed to deliver big, singing overdrive with high-quality, tape-echo-type delay from a compact pedal—which certainly sounds like a recipe for golden tone. And if doesn't quite summon the strains of some celestial chamber quartet, it's a powerful pedalboard tool of deliciously varied capabilities.

Heart of Gold

For all the tone-massaging capabilities it delivers, the Golden Cello makes do with just four main controls—delay, drive, volume, and tone. There's more going on than meets the eye, however. Pop open the hood and there are four tiny holes on the PCB. They're labeled gain, delay 1, repeat, and delay 2, and they yield access to trim pots for additional delay tweaks.

In the Golden Cello's manual, the user is advised to exercise extreme caution when opening the pedal to make adjustments, because it's easy to disturb the electronics and damage the pedal—a truth I discovered first hand: After opening the pedal, adjusting the trim pots, and gingerly replacing the cover, the pedal came to life and promptly died when I moved my chair to assume a better playing position.

It was hard to determine the exact reason for the intermittent signal, but I did discover that the delay section's circuit board can make unwanted contact between the solder connections and the back plate of the pedal—contacts that ground the circuit and interrupt the signal. That means aligning the back plate before screwing it back together has to be done *very* carefully.

With this in mind, it's hard not to wonder how the pedal might fare in a jostling, unventilated tour van traveling through climates that could have drastic extremes in temperature and humidity—because you're definitely not going to want to find out in the middle of a gig that, since the last show, those delay-circuit connections have been jostled into contact with the rear plate. For a builder of pro-grade gear like Mad Professor, it's surprising the pedal isn't a little more bulletproof. (Mad Professor's John Pegler tells us this design flaw has since been fixed.)

That said, the circuit design is admirably ambitious. It isn't easy to cram such a fine-sounding overdrive with two separate delay circuits into a single chassis. And it's pretty clear that the circuit is designed with careful consideration for component selection, including the venerable Princeton Technologies PT2399 chip. Though it's digital, it does a great job of emulating tape- and bucket-brigade-delay tones in a very small and efficient circuit.

The Midas Touch

To test the Golden Cello, I used a '60s Gibson Firebird with P-90s and a Fender Lone Star Stratocaster, both routed via the Golden Cello into a '60s Fender Twin Reverb and played at volumes ranging from quiet to near meltdown.

Using the Firebird's neck pickup, I dialed in thick, heavy distortion with a touch of delay, which enabled me to paint with some very bold brushstrokes. The pedal has a liquid, sustaining distortion that seems capable of lingering for days—just as the name implies. But it can also get quite biting for leads when you crank the distortion and tone all the way up. There's also enough gain to drive a Twin's speakers to a husky bark. At more

aggressive settings, the distortion can border on fuzz, but it retains plenty of harmonic definition. The tone and distortion knobs are very interactive, and the former generates a lot of harmonic content in the high end, which can become very exaggerated when you crank the gain.

With a neck pickup, rolled-off tone, and delay disengaged, you can get a fine approximation of Robert Fripp's sound on King Crimson's "Starless." The nicely compressed distortion, which blunts the sound of pick attack in a really cool way, can be so smooth in these settings that it nearly sounds like backwards tape. At these settings, the silky but aggressive tones of Carlos Santana and John McLaughlin's *Love Devotion Surrender* album also come to mind—and the pedal is as ideal for fast, defined, single-note flurries as that association would suggest

The delay knob brings in a solid-sounding, tape-like echo that found me indulging in ripping, ethereal solos much more than I ordinarily would—it's real easy to find the "Comfortably Numb" zone.

RATINGS

Mad Professor Golden Cello, $199 street, mpamp.com

Pros: Awesome lead tones in one pedal. Cool '70s-style atmospheric possibilities.

Cons: Possible reliability issues. Limited flexibility due to internal delay controls.

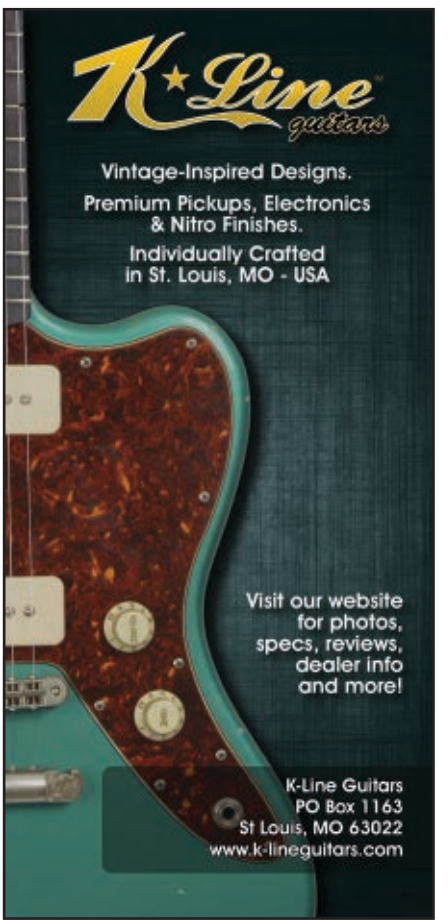
Tones	4.5
Ease of Use	4
Build	2.5
Value	3.5

Though the factory-preset delay tone was perfect, tweaking the internal trim pots expanded its range in cool ways. I got nice doubled sounds with the delay trims and repeat pulled down, though my favorite was bringing out heavy delay and murky lo-fi repeats by cranking both delays pots all the way.

The Verdict

With singing sustain and emotive, atmospheric delay, the Golden Cello is a lead guitarists dream machine. Many players like several distortion pedals and delay textures on tap, but this pedal is a one-stop shop for guitarists looking for saturated and delayed lead tones that can flow and blur into the infinite. The overdriven tones have a foot in the '70s, to be sure. If you want to recreate the shag-era sounds of a big amp driven to saturation, the Golden Cello gets you mostly there for a lot less dough (and in a lot less space) than a raging Marshall. The tape-delay tones are beautiful, too, although if you like to tweak settings often or need more focus, they may feel limiting.

That said, for the money, the Golden Cello's tone is entirely impressive: If you're set on inexpensively and easily conjuring luxurious, Pink Floyd-style '70s lead tones, it's a serious contender.



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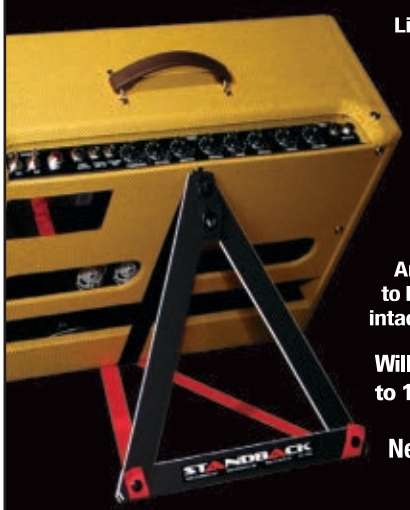

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Tony Cochran Custom Electric Guitars

BY RICH OSWEILER

Internationally syndicated cartoonist Tony Cochran brings an entirely new meaning to "Frankenstein-ing" a guitar: He produces uniquely over-the-top instruments in his Columbus, Ohio, workshop by giving closet-banished guitars an opportunity for a new life. With a fine arts background and a nod to the work of experimental pop-artist Robert Rauschenberg, Cochran approaches his instruments as functional works of art and no two are alike. In fact, there is probably not one that's like anything you've seen before.

Like Rauschenberg, Cochran incorporates found objects into his work that others may consider as junk. He'll start out with well-made copies of classic guitars he finds at garage sales, Craigslist, and other various outlets before beginning the modding process. But we're not necessarily talking about swapping pickups, tuning machines, or other hardware—though he does repair any damaged or worn part to work as it was originally designed. Cochran will find his very unique appointments for the instruments by combing through boxes of junk at unlikely places like church bazaars to Salvation Army stores to garage sales.

Once in his workshop, the guitars are sawed, gutted, routed, and whatever else is needed to accommodate their evolution, along with a number of finish-altering techniques that may or may not involve acid,

Boostercaster

The Boostercaster was selected for inclusion in *GUITAR: The Instrument That Rocked The World*, the traveling exhibition of the National Guitar Museum. According to Cochran: "This guitar was found under a hidden panel in the floor of a former mental sanitarium being demolished in Weedle, Louisiana. It was wrapped tightly in oilcloth and string. There was also a note that said 'Better to just put it back, but I know you won't. Do not touch booster while playing.' What can I say … I haven't!"

Oikcaster

"The Oikaster was used by Sam 'Splat' Redcat during his final performance in 1970," shares Cochran. "He was closing the East Thompkin Blues Festival with his violent acid-rock/blues version of 'Dead Man's Curve,' originally performed by Jan and Dean. It's highly modified and not UL approved. A combination of rainstorm, bare feet, and a bootleg amperage booster on the imaginative wiring he used for 'big gain up top' fried him like a breaded chicken leg. It used to be shiny."

Memphiscaster

"Jack N. told me his Uncle Donny customized this guitar from scavenged pieces of a satellite that crashed into his backyard sometime during the summer of 1956. After the modifications were made, however, he claimed that playing it made him queasy and paranoid." Cochran continues, "Jack traded him for a banjo, but said he was never comfortable playing the guitar either. I traded Jack an old Dodge truck for the guitar, but I won't play it."

paint thinner, wax, or something else entirely. "Rare guitars are safe from me. I won't cut up anything classic or with historical significance," contends Cochran. "But what isn't safe is the history of the guitar I'm reimagining. A new look demands a new story." That's exactly what happens. Beyond their new aesthetic, each guitar takes on its new life with a much more detailed—and often sordid—past history than it had before.

"The only mod I ever performed on a guitar before this project was painting a Zeppelin logo on my mom's Danelectro in the '70s (without her permission)," says Cochran. "She was more into Johnny Cash and Roger Miller, so she made me scrape it off." But Cochran adds, "I mod everything. I can't leave anything alone." And he has—from his lawnmower to a Harley to his truck to a power sprayer.

Cochran's clientele spans the globe and includes musicians, music producers, art collectors, and pop stars—people who "love guitars, love art, and aren't averse to buying something a little outside the box. Having some disposable income seems to help." He recently had a couple buy one as their 20th anniversary gift to each other. "Beats a blender!" says the luthier.

The incorporated parts—with names ranging from bird flauters to industrial slooters to pictulators—"should look like they belong on the guitar, not a piece of something that I just stuck on there." When asked about specifics on his appointments, Cochran shared, "I could tell you, but charges could be filed. Seriously, if I pointed out a unique part, then someone would only see that part, not the guitar as a whole." Shown here are just a handful of Cochran's unique instruments, along with details on their "new-old-history."

Pricing and Availability

Priced between just above "I'll take it" and just under "Oh, my God," Cochran produces 8-15 guitars per year and sells them directly through his website, which is managed by his wife and partner Vickie Smith. Cochran contends that if it weren't for her, "I would just have a pile of cool guitars in my basement." Though he usually finds the guitars on his own, he also enjoys working with a guitar supplied by a customer. Although he likes to retain as much artistic license as possible, he will work with requests to incorporate a supplied part or two. "Provided it's the proper scale, it's not a problem." PG

tonycochranguitars.com

Chalicecaster
"The Chalicecaster was found in a sealed, cedar case locked in the trunk of a beautiful 1957 Cadillac that was purchased at an estate sale in North Chicago. Who owned *this* puppy? Could have been a priest, but could have been a vampire," muses Cochran. "Same weird vibe and it has some wear, but you have to admit it's pretty."

Jukeboxcaster
"John Redstone was rehabbing the Old Dog Saloon in Finster, Wyoming. He found this behind some double-thick sheet rock in what had originally been the ladies room. It had an unreadable note taped to the strings and a diagram of how to wire up the red button marked 'R' underneath the tone knob." Both come with purchase and the brown stain on back *probably* isn't blood," shares the luthier. "This guitar might be Fat Jelly Marburn's 'Big Green.' Let's hope not."

Tokyocaster
"Private Eldon R. found this instrument in a steaming pile of rubble in 1964 while he was patrolling a burned-out village on the Mekong Delta. It was in remarkably playable condition despite some charring and corrosion. While the village chief would not say how it got there, he sure seemed glad to be rid of it," says Cochran.

1966 Gibson Firebird V-12

WRITTEN BY CHRIS KIES, PHOTOS BY REBECCA DIRKS

In the early 1960s, Gibson was steadily losing ground to archrival Fender. The SoCal company offered radical colors, various pickup configurations, and several of their models—especially the Stratocaster and Jazzmasters—quickly became a part of surf culture thanks to the Beach Boys and Dick Dale, among other legendary players. The continued growth and pop culture immersion from Fender forced Gibson to roll up their sleeves and come out with a new batch of guitars that weren't considered old-fashioned or overpriced.

Gibson dipped its toe in the futuristic guitar design frontier in 1958 with the release of the Explorer, Flying V, and supposedly the Moderne (which never made it into production). Unfortunately, these newfangled axes were just a bit too unconventional for most guitarists. (Obviously, today's vintage market and the numerous reissue runs show guitarists' admiration for the '58 trio.) But in 1963, Gibson's CEO Ted McCarty took a page out of Fender's playbook and sought to have a new model that was reminiscent of mid-'50s car tailfins. They enlisted car designer Ray Dietrich—who helped create the 1931 Reo Royale Eight and the early Checker Motors Marathon models—to come up with a new guitar design.

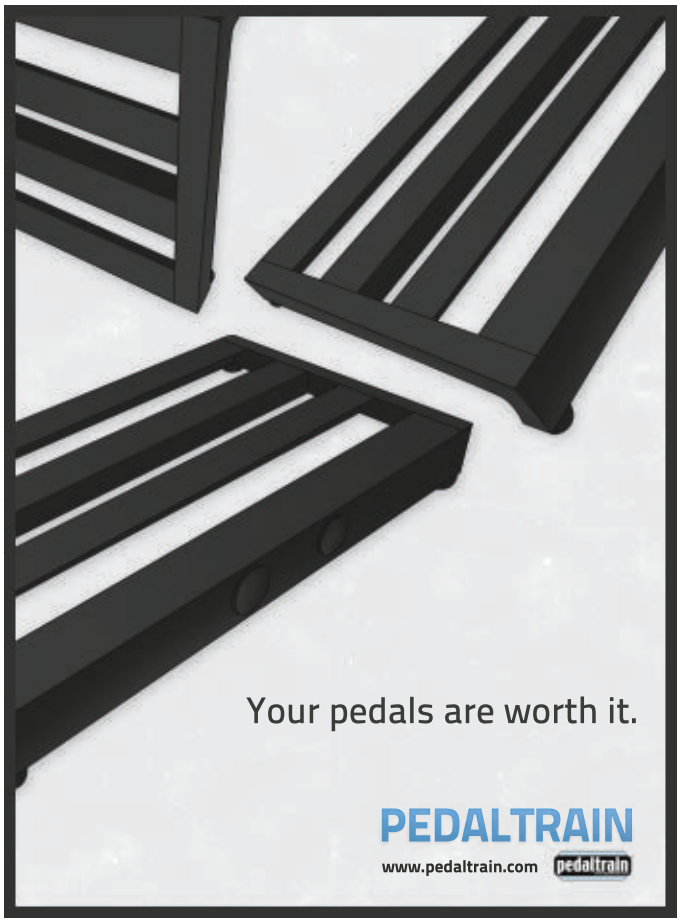
The first Firebird I produced in 1963 had several firsts for Gibson—a peculiarly reversed body shape that had its lower horn longer than the upper, a neck-through design, and a Fender-ish reverse headstock that had banjo tuners on its right side. It features a standard Gibson scale length of 24.75", mahogany body, mahogany neck, Brazilian rosewood fretboard, and a wrapover stop tailpiece. The first models came loaded with mini humbuckers, but eventually were upgraded to standard humbuckers with the Firebird III. The reverse body style was the Firebird norm until 1965 when Gibson unveiled the non-reverse design featuring a substantial upper bass-side horn.

In 1966, Gibson went a step further and offered the non-reverse Firebird in a 12-string—the model shown here was recently purchased by Red Hot Chili Peppers guitarist Josh Klinghoffer. The V-12 features an asymmetrical mahogany body, mahogany set-neck, Brazilian rosewood fretboard, blackface LP-style headstock with pearl split diamond inlay and six tuners on each side, and a Tune-o-matic bridge. The original Firebird models came stock with P-90 pickups, but this particular model has mini humbuckers. Anomalies on this guitar lead Klinghoffer's tech, Ian Sheppard, to believe that this was either a "factory second or a half-assed prototype." The headstock's diamond inlay is off-centered, and this V-12 has two on/off pickup switches whereas the standard model has a 3-way toggle. Additionally, the pickguard is a different shape and has 11 screws while the standard version has only 10.

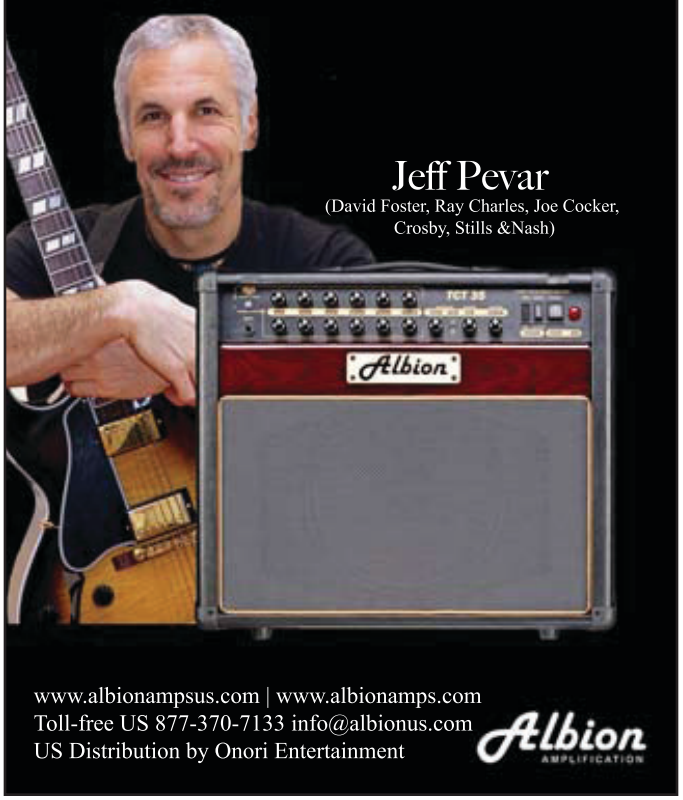
This is an endangered bird: Only an estimated 272 were produced from 1966–67. This doesn't stop Klinghoffer from enjoying his recent purchase. Sheppard claims that, "so far he hasn't used it on any songs, but when he feels particularly excited he'll tell me before the show that he'll want me to bring this up to him during a four-bar rest within the encore jam. He uses it when he wants to get a bit out there [*laughs*]."

A special thanks to Josh Klinghoffer and Ian Sheppard for the opportunity to feature this fine piece of gear and its story.

Got some gear that would make a great Gear of the Month? Then email pics and its story to us at gotm@premierguitar.com.



Ask Jeff Pevar.



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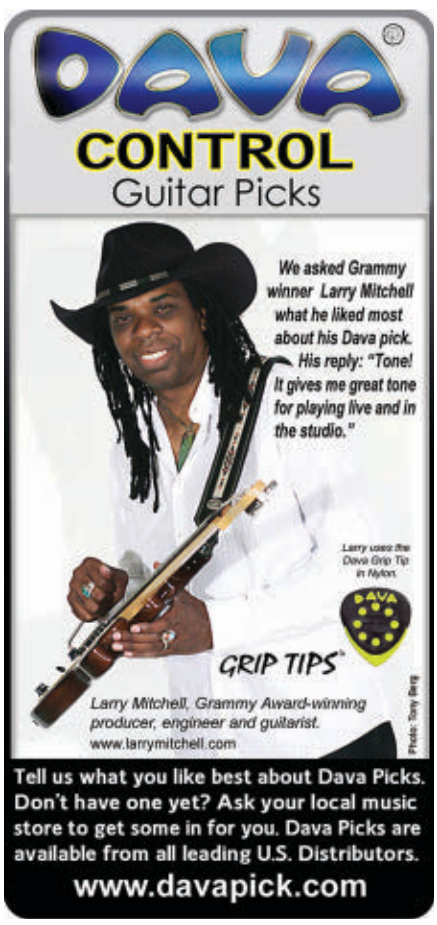
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NEXT MONTH IN PREMIERGuitar

Photo by Larry DiMarzio

STEVE VAI

The High Priest of players talks spiritual enlightenment, musical inspirations, and gospel-choir-fueled guitar freak-outs on his new release, *The Story of Light*.

SUMMER NAMM

Are you ready for our balls-to-the-wall gear coverage (minute-by-minute Facebook posts, truckloads of video demos, and the deets on what's buzzing)? Yeah, so are we!

ANDERS OSBORNE

PG editor Jason Shadrick described Osborne's new album, *Black Eye Galaxy*, as being "like what Jackson Browne might sound like if he grew up hanging out with Jimmy Page in New Orleans." Who *wouldn't* want to hear that?

HOT ROD YOUR GUITAR

Take the top off and rev up the soldering iron. This all-encompassing guide will aid all types of players in search of a sonic change—from simple clamp-on techniques to control-switch tinkering to more complicated, electronic overhauls.

GEAR REVIEWS

Our reviewers have a lot of "work" to do, beginning with plugging in the new Deimel Firestar and Gibson Les Paul Standard guitars, along with the Ritter R8 Singlecut and TC BG250 combo on the low end. Plus, we'll run-down the Diago Little Smasher amp and an Earthquaker Devices Rainbow Machine.

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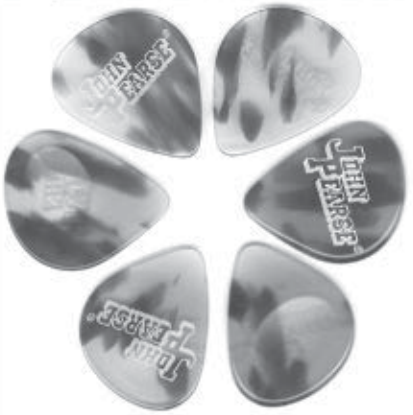

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IF IT AIN'T GOT THAT SWING BY JOHN BOHLINGER

I recently attended the 2012 New Orleans Jazz Fest where music enthusiasts were treated to such Titans of Jazz as:

- Foo Fighters
- The Eagles
- Grace Potter and the Nocturnals
- Bruce Springsteen
- Tom Petty and the Heartbreakers
- Bonnie Raitt

The fest was stacked with an impressively long roster of top-tier rock 'n' roll acts that filled the 60,000-seat venues. The festival also featured a pile of blues, gospel, and R&B acts on smaller stages, and then a smattering of local jazz groups in the smallest tents.

The festivities shut down each night around 7 p.m., so I spent my vampire hours stumbling from Jackson Square to the carnage of Bourbon Street. (Best T-shirt award: I got Bourbon-faced on Sh*t Street.) Pre-Katrina, this square and the area's sweaty streets and dank clubs were full of horns blowing Dixieland and kids tap dancing with bottle caps screwed into their Air Jordans. It was an amazing scene you couldn't find anywhere else in the world.

Now it's all strip clubs and rock bars blaring "Don't Stop Believing," "Keep Your Hands to Yourself," and "Hard to Handle"—basically the same set list you'd hear in any crap gig in America. I enjoy *playing* these warmed-over party anthems at clubs, but I don't want to hear them—especially in New Orleans, a town known for two things:

1. Great food.

2. Inventing jazz.

The gumbo and shrimp étouffée remain spectacular, but the jazz barely has a pulse.

Go to Hawaii and you'll hear traditional Hawaiian music in almost every restaurant, bar, and hotel lobby, and tourist and locals alike enjoy it. Unlike Hawaiian music, jazz was once the highest-selling format in the Western world. Louis Armstrong enjoyed mainstream popularity, much like John Mayer does today. How is it that New Orleans' once spectacularly popular music has all but disappeared in its hometown?

Jazz died on Bourbon Street when one club booked a dirty rock band and drunken college kids mobbed the joint. The other clubs had no choice but to follow suit or go belly up. Tourists didn't want to think, they wanted to drink, and jazz required too much thinking. The Jazz Fest fell into the same marketing necessity—jazz quit putting butts in seats, so pop and rock took over.

Louis Armstrong and The Hot Fives recorded hot, swinging music that—for many connoisseurs—represents the birth of recorded jazz. Cut in the 1920s and distributed on 78s, the tunes capture the classic spirit and energy of New Orleans.

Jazz faced trouble when bebop adopted the battle cry, "always evolve." Jazz players began to look down their noses at the music and originators who brought their genre popularity. Modern jazz turned music into an intellectual muscle-flex and in doing so, alienated its audience.

Modern jazz reminds me of those annoying people who try to sound brainy by speaking in complicated three- and four-syllable words when a simple phrase would work better. Rather than saying, "I love her, she don't love me, that hurts," the jazzer might say, "The object of my affection remains indifferent to my beseeching confession of endearment. I feel disconsolate by this unrequited adoration."

Lose the message and you lose the audience.

In a way, it reminds me of '80s shred guitar. The big hairs kept taking it farther until '80s guitar compromised emotion in the pursuit of technical difficulty. Music fans eventually traded emotionless fast scales and spandex for angst-ridden grunge chords and flannel. In the '40s, beboppers traded swing, perfect harmony, and memorable melodies that made people dance for the freedom to play for themselves.

What's the difference between a rocker and a jazzer? Jazzers play thousands of chords for four people, rockers play four chords for thousands of people. I respect those cats who never compromise their art, and I wish them the best. It's a shame that some talented people have to struggle to make a living because of the esoteric nature of the genre they pursue. But part of me feels that the elitism of some avant-garde players makes them deserve what they get. No compromise is no way to earn a living.

There's rich irony in that a type of music that prides itself on no boundaries actually limits itself by avoiding those simple, singing melodies that made old-schoolers like Louis Armstrong so popular. For the record, I suck at jazz.

JOHN BOHLINGER
John Bohlinger is a Nashville multi-instrumentalist best known for his work in television. He led the band for all six seasons of NBC's hit program Nashville Star, *as well as the 2011, 2010, and 2009 CMT Music Awards and many specials for GAC, PBS, CMT, USA, and HDTV. Check out his performances on YouTube.*

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AMPLIFIER PRODUCT SPOTLIGHT

Welcome to *PG*'s Amplifier Product Spotlight!

To complement *Premier Guitar*'s "Amp Issue" we've included this special promotional section. The "Amplifier Product Spotlight" showcases some of the newest and coolest products from a variety of manufacturers. You'll find amps of all types and sizes; detailed product information; and handy links so you can easily view demos, hear sound clips and get your hands on these tone-a-licious items!

CHECK IT OUT!

AMPLIFIER

3 Monkeys Amps Sock Monkey

TYPE: Clean , High Gain, Combo, Single Channel, 10" Celestion Greenback

MSRP: $1,379

Small lightweight cabinet loaded with a 10" Celestion Greenback, 2x EL84 output tubes for 10-12W, 3x 12AX7 preamp tubes, VOLUME, TREBLE, BASS, and MASTER controls, as well as a pull BOOST on the volume control. Decidedly British sounding, it's tone is in between a AC-15 and an 18 watter with more gain. Built in limited runs of 25, each run gets a different color tolex combination.

FEATURES

- Two EL84 Output Tubes
- 10-12 Watts Output with Master Volume
- Three 12AX7 Preamp Tubes
- Celestion 10" Greenback Speaker
- Regal Blue Tolex with a Silver racing stripe or Red with Ivory racing stripe
- Volume (Pull Boost)
- Treble
- Bass
- Master Volume
- Dimensions: 19"W x 15"H x 8.25""D
- Weight: 25lbsg

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PRODUCT SPOTLIGHT

Fender Super-Sonic 22 V-Custom Limited

TYPE: **Clean , Medium Gain, Combo, Multi-Channel**

MSRP: **$1,499**

The Super-Sonic 22 V-Custom Limited is based on the Deluxe Reverb 6V6 tube-powered platform. With two classic Fender clean tones, an overdrive channel and a Celestion Vintage 30 12" speaker, the V-Custom Ltd. covers a huge sonic range. You'll get more grind, more guts and extra low-end punch. The hot rod style black and gold tolex design is reminiscent of a muscle car and exudes just the right amount of attitude to match the aggressive sound of the V-Custom Ltd. This special limited-edition amp is available exclusively at ProGuitarShop.

FEATURES

- Celestion Vintage 30 Speaker (12" 60 Watts).
- Tubes 2 6V6, 2 12AT7 and 3 12AX7.
- Output: 22 Watts, 8 ohms.
- Channels: 2 (Vintage and Burn).
- Vintage channel contains pre-gain tone controls and two switchable voices.
- Burn channel contains dual gain controls and post-gain EQ. Includes 4-button footswitch.
- Fender long-spring Reverb by Accutronics.

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PRODUCT SPOTLIGHT

Carr Amplifiers
The Bloke

TYPE: **Medium Gain, Head, Combo, Multi-Channel**

MSRP: **$2,450**

Meet the Bloke
Macho 70s to 80s overdrive with a stripped down super usable feature set.

We meld raw brashness with an incredibly muscular direct driver output section. Bloke overdrive is thick, articulate, and with exceptionally solid speaker control. Massive filter capacitors in all power supply stages further add to the rock breaking low punch. Foot switchable Lead mode increases sustain and odd order harmonic drive – perfect for cutting thru on solos.

For those who crave honest, dynamic tube crunch with firm low end, we salute you!

FEATURES

- Huge power supply filter caps for thick, strong low end
- 100% point to point hand wired
- 1 1/2 channel Foot switchable Loudness controls
- 12AT7 Direct Driver Pre amp to Power amp interface (Class AB2)
- Solid Pine Dovetailed corner cabinet with integral baffle made in house
- 48 Watts EL-34s, 23 watts 6V6s
- Foot switch included
- Head, 1-12, and 2-12 combos
- Light weight – great looks!

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CEC amplification

CEC Amplification Brigand

TYPE: Clean , High Gain, Medium Gain, Head, Multi-Channel

MSRP: $3,495

For discriminating guitarists looking for a single amp that can do everything from clean to modern high gain, Brigand has got you covered. This 80 watt, all-tube multi-channel amp head allows you to dial in up to four different tones and access them all on the fly thanks to its intuitive channel and mode switching. Adding to its broad range versatility are features like switchable negative feedback, a tube buffered effects loop, and an optional MIDI interface. Combined with an innovative set of controls for tone shaping, Brigand s a workhorse for virtually any style.

FEATURES

- Two completely independent channels with two modes per channel; all footswitchable
- 3x 5751, 1x 12AU7, 1x EF86, 1x 12AT7, 1x ECC803S
- 80 watt, dual KT88 power amp
- Tube buffered effects loop, switchable on/off and switchable series/parallel
- Precise control of volume balance across channels and modes
- Accepts 4, 8, or 16 ohm speaker cabs
- Rear panel power tube bias check and adjustment
- Switchable negative feedback for control of power amp feel
- Hand built in the USA

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PRODUCT SPOTLIGHT

Blackfoot Custom Amps HB16 (Harp Box)

TYPE: Medium Gain, Head, Single Channel

MSRP: $1,750

The HB16 from Blackfoot Custom Amps possesses one of the most dynamically responsive circuits known to man. Warm and tight bottom end, thick and smooth mids, and crystal clear highs coupled with overdrive that is available aith the flick of your pick. Designed originally for Harmonica players, this amplifier also sounds AMAZING with guitar AND bass. Typically sold as a short stack, it is also available as a combo.

FEATURES

- Preamp: 12AT7
- Phase Inverter: ECC83S
- Output: TAD 6V6GT-STR's
- Rectifier: 1N4007's
- Wattage: 16 (Pentode) 8+ Triode
- Speaker Outputs: 4,8,16 Ohm
- SPL: 116.7db @ 1m(A weight) 2x12 Cabinet
- Price: $1750.00 (Head) $2450.00 (As Shown)

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Blackfoot Custom Amps

AMPLIFIER

Fargen Amplification Retro Classic

TYPE: Head, Vintage to Medium Gain, Multi-Voicing

MSRP: $2,250

Designed without compromise, the Retro Classic captures three different sounds in one single channel, 25 watt amp. The Fargen Decade switch features three positions, '59, '65 and '68 ... combining some of the best tones ranging from smokey, greasy blues to blues-breaker to classic brown sound. Effects users can plug in their favorite outboard units through the serial effects loop on the back panel. And in instances where the amp's 25 watts are just a little too much, a high/low voltage switch on the back drops the voltage below the standard 120V in the manner of a Variac.

Fargen

Professional Tube Amplifiers

FEATURES

- 25 watt 2 x KT66 power amp
- GZ34 rectifier tube
- Super transparent post phase master volume
- 16g aluminum chassis
- Mercury custom vintage replica transformers
- Fargen Custom Shop carbon comp resistors
- SoZo Vintage signal capacitors
- Vintage style head cab and aesthetics
- "Variac Sag" high/low voltage switch
- Tung Sol reissue 12AX7 and KT66 tubes
- Hand-wired vintage layout and construction
- Matching 1x12 and 2x12 cabs available

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PRODUCT SPOTLIGHT

Dr. Z Amps M12 1x12 Combo

TYPE: **Clean , Medium Gain, Combo, Single Channel**

MSRP: **$1,499**

The Dr Z M12 gives you big tone and clean headroom with 12 watts of power. Designed with the pedal board player in mind, the EF86 front end will devour your pedals and make them sound like they are built into the amp. The M12 will become an essential tool for players that love their pedals as much as their guitars and amps. The simple tone stack gets out of the way and lets your pedals do their thing.

All that being said, what happens when you get things really cooking and turn the volume and treble up past 3:00? You'll find over the top dynamics, drive, and chime without ever getting harsh. Think of the M12 as the perfect half powered offspring of the Z Wreck and Stang Ray. You get the clarity of the Stang Ray with the sweetness and ease of the Z Wreck.

FEATURES

• Power Output	12 Watts
• Output Tubes	2 EL84 Cathode Biased
• Preamp Tubes	1 EF86, 1 12AX7
• Rectifier	1 5Y3
• Controls	Volume, Bass, Treble
• Configurations	Head, 1x10 Combo, 1x12 Combo, 2x10 Combo
• Colors	Black, Blonde, Red
• Other	4, 8, 16 ohm speaker outs

PLAY VIDEO

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AMPLIFIER

FISHMAN®

Fishman Loudbox Artist

TYPE: Clean , Combo, Multi-Channel, Acoustic

MSRP: $769.15

The new Loudbox Artist is an evolution in acoustic amplifiers. It leverages the award-winning design of the Loudbox 100, yet packs more power and enhanced features into an incredibly lightweight and portable package.

120 watts of ultra-clean, bi-amplified acoustic power, two versatile input channels featuring Fishman's legendary tone and feedback-fighting controls, plus a new dual effects section make the new Loudbox Artist the ultimate portable acoustic instrument amplifier for the seriously active musician.

FEATURES

- Power: 120 Watts, bi-amped
- Drivers: 8" woofer, 100W; 1" soft dome tweeter, 20W
- SPL: 112dB SPL @ 1 meter
- Speaker Baffle: 10° built-in tilt
- Dimensions: 13.5"H x 15.5"W x 11.5"D (34.3cm x 39.4cm x 29.2cm)
- Weight: 25.5lbs (11.6kg)

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PRODUCT SPOTLIGHT

Hayden Amps Hayden MoFo 30 Head

TYPE: All-Tube Head

MSRP: $949

Portable yet potent, the Hayden MoFo 30 is an all-tube guitar amp with a whole lot of attitude – and definitely not a one-trick pony. From stunning bell-like clean tones with real depth, to plexi-esque classic rock crunch, right up to full-on metal mayhem, this 30W head does it all.

Separate UK and US-voiced instrument inputs shape the signal for classic, darker British tones or brighter, more scooped US tones respectively, and unlike other mini heads a clever series FX loop allows you connect your favourite stomp boxes straight into the power section. When you're rehearsing, you'll love the Stealth switch underneath that lowers the amp's power section from 30W to around 2W, letting your MoFo scream… without the neighbours screaming at you.

FEATURES

- 30W All-Tube Head
- 4 x EL84 power section tubes
- 3 x ECC83 preamp tubes
- Single channel with footswitchable MoFo Boost (footswitch included)
- Stealth switch for reduced overall volume
- 4 cascaded gain stages
- 8/16 Ω speaker outputs for a variety of cabinet options
- Bass, Middle, Treble and Presence controls
- Separate US and UK-voiced guitar inputs
- Series effects loop
- Rugged steel chassis
- Padded gigbag with shoulder strap included

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AMPLIFIER

soldano
CUSTOM AMPLIFICATION

Soldano Custom Amplification Hot Rod 25

TYPE: High Gain, Medium Gain, Head, Multi-Channel

MSRP: $2,650

It's Silver Anniversary time! Yep, that's right – on April 1st, 2012 Soldano Custom Amplification turned 25, celebrating a quarter century of building the world's finest guitar amplifiers. To commemorate this occasion, we are pleased to introduce the SOLDANO HOT ROD 25. Its preamp circuitry is based on the legendary SOLDANO 100w SUPER LEAD OVERDRIVE. It has a unique power section which utilizes two 5881 power tubes and a filter choke in the power supply – two features usually found only in higher powered amps – that enable this compact little 25 watt head to deliver much tighter bass and punchier low end than most other amps in its class.

FEATURES

The HOT ROD 25 features a tube-buffered, post master volume effects loop and effortless channel switching via foot switch between the Normal and Overdrive Channels. There are independent Preamp gain and Master Volume controls for each channel. Bass, Middle, Treble, and Presence controls provide the tone shaping. A rotary Impedance selector switch allows for the use of 4, 8, or 16 ohm speaker cabinets.

- Power: 25 watts
- Weight: 29 lbs.
- Size: 8.5″"H x 17.5"W x 9.5"D
- Preamp Tubes: Five 12AX7 / ECC83
- Power Tubes: Two 5881 / 6L

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soldano.com

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PRODUCT SPOTLIGHT

MESA/Boogie, LTD.
MARK FIVE

TYPE: Multi-Channel

MSRP: $2,249 Head, $2,399 Combo

Three Channel Footswitchable guitar amp with 9 Modes covering the history of MESA MARK Series models. Mark I, IIC+, and IV are all covered in both clean and hi-gain Modes. Power provided by MESA's patented Simul-Class™ Output which now includes Multi-Watt™ Channel Assignable Power and features 90w Simul-Class, 45w Class A Pentode or 10w Class A Single-Ended power. The classic Boogie 5-Band Graphic Equalizer is now expanded to include a Channel-Assignable choice of the SLIDERS or the new PRESET rotary control. Additional Features include Footswitchable Series Loop, All-Tube Spring Reverb, Footswitchable SOLO™, Variac Power, EXTERNAL SWITCH jacks, BIAS SELECT (6L6/EL34).

FEATURES

Three Channels, Nine Modes, Multi-Watt™ Channel Assignable Power featuring 90w Simul-Class™, 45w CLASS-A Pentode, 10w CLASS A Single-Ended, 5-Band Graphic EQ w/ choice of SLIDERS or PRESET Rotary, Series Effects Loop, Footswitchable All-Tube Spring Reverb w/Individual Controls, SOLO w Level Control, EXTERNAL SWITCH Jacks, BIAS SELECT Switch, 1x8Ohm, 2x4Ohm Speaker Outputs

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AMPLIFIER

PRS Guitars 2 Channel "H"

TYPE: **Clean , High Gain, Head, Combo, Multi-Channel**

MSRP: **$1,649**

Handmade in Stevensville, Maryland, the PRS 2 Channel "H" has a modern, "in your face" tone and features proprietary "Heyboer" transformers. The "H" is setup with independent master volume, treble, mid, bass, and gain controls with global reverb. The unique lead channel offers powerful, smooth distortion with liquid sustain, while the clean channel has shimmering, clean highs and extensive headroom but can be overdriven at maximum settings. An effects oop with adjustable send and return is also featured on this fixed bias amp. This fast, articulate amplifier is well suited for today's music where alternate tunings are a must.

FEATURES

- 6L6 Tubes
- Heyboer Output Transformer
- Global Reverb
- Volume, Treble, Mid, Bass and Bright Switch for each channel
- Lead Master Volume
- Clean Master Volume
- 4, 8 and 16 Ohm Selection
- Two Output Jacks
- Fixed Bias
- Effects Loop (send and receive level controls on back panel)
- Footswitch - Controls channel selection and reverb on/off
- Charcoal Figured Maple Fascia

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PAUL REED SMITH AMPLIFICATION

PRODUCT SPOTLIGHT

PRS Guitars
PRS SE 50

TYPE: **Clean , High Gain, Head, Combo, Multi-Channel**

MSRP: **$1,099**

With the power of 50 watts and two EL34 tubes, the PRS SE 50 does it all with impressive definition and plenty of volume for any live setting. The clean channel sparkles, and when driven to the extreme, the dirty channel produces punchy, tightly focused distortion.

As with all PRS SE amps, the 50 features 2 channels with separate EQ, an effects loop, reverb, a 0.090 aluminum chassis, a high-end "on-on-on" selector switch, custom wound transformers, custom voiced speakers…even custom knobs. The SE 50 is available as either a head or 1x12 combo.

FEATURES

- 50 watts
- 2 Channels
- 2 "JJ" EL34 Tubes
- 12AX7 Preamp Tubes - Clean and Lead Channel Preamp
- 12AT7 Preamp Tubes - Loop, Reverb and Phase Inverter
- Chassis Mounted Pots, Jacks and Switches
- Board Mounted Tube Sockets
- Lead and Clean Master Volume Controls
- Global Reverb
- Independent Volume, Treble, Mid, and Bass
- Bright Switch for each Channel
- Effects Loop
- Fixed Bias with Test Jacks and Adjustment Pot
- 4, 8, 16 Ohm Selection with Two Output Jacks

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PAUL REED SMITH AMPLIFICATION

AMPLIFIER

OBRIEN
AMPLIFICATION

O'Brien Amplification

TYPE: Clean , High Gain, Medium Gain, Head, Combo, Multi-Channel, Variable Gain

MSRP: $2,795 to $5,495

Class A and Class AB amplifiers, point to point hand wired tube circuitry with exclusive variable gain technology, reverb, and a variety of speaker options. Available in heads, combo's and a variety of speaker cabinets. The variable gain pedal allows the player to have any amount of gain in real time on the fly controlled with a volume style controller that effects the level of gain while being played.

FEATURES

30 watt, 50 watt and 100 watt amps all with Pentode triode switching for half power cuts on all models. 8 pin power tube power sections available. 12ax7 based preamp section, tube reverb and tube power section.

americanguitarandband.com

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PRODUCT SPOTLIGHT

VOX
Night Train 50

Matching V212NT cabinet also pictured

TYPE: Tube Amplifier Head

MSRP: $1,000

The Night Train 50 is the newest member of the VOX Night Train family. This powerful, all-tubeClass AB head offers two footswitchable channels for a diverse range of tones. The Night Train 50 features EL34 tubes in the power stage and 12AX7s in the pre-amp. The Night Train 50 covers a rich array of sonic variations, makingit a versatile choice for any guitarists.

FEATURES

All-tube, two channel head featuring Class AB amplifier construction, delivering 50 watts of power• Stylish design with eye-catching mirror finish• 12AX7 (x4) preamp tubes; EL34 (x2) power stage tubes• BRIGHT channel provides the traditional VOX chime; plus a THICK switch which bypasses the EQ for more gain• GIRTH channel delivers an energetic powerful gain tone• Master TIGHT switch cuts the low end to tighten the overall sound• FX loop with tone-saving true bypass-Headphone/line out jack for recording directly or late night practice

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The Heart & Soul of Your Amp Mercury MAGNETICS®

Mercury Magnetics The Heart & Soul of Your Amp

TYPE: All Tube Amps

MSRP: Call for price information

- So, you love listening to music, you love playing guitar, but are you really happy with the way your amp sounds?
- Could it be better without getting another amp?
- Are you, or the people listening to you, inspired by your tone?
- Do other players have better sounding amps?
- Are you getting laid enough?

Maybe it's time to take a look under the hood and check out the quality of the components in your amp. The performance and tone of your amp begins and ends with your transformers! Generic transformers equal generic tone. Contact Mercury to find the answers to these questions!

FEATURES

- Upgrades
- ToneClone Vintage Replacements
- Vintage Restorations
- Custom and OEM
- Made in the USA with Made in the USA Materials!
- The finest AMERICAN Copper and Steel money can buy!
- No Short Cuts
- No Compromises

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PRODUCT SPOTLIGHT

Louis Electric Amplifiers Buster

TYPE: **Clean , Medium Gain, Head, Combo, Multi-Channel**

MSRP: **$2,000**

'The Buster' is all the name implies it's unique take on a muscled-up tweed 5E3 Deluxe "You can throw in the back seat, play at a gig in a decent sized room and hang with the band – something you can't really do with a stock 5E3." And how do you do that? Beef up the power section to a full 27 watts with much bigger transformers designed for dual 6L6s and a 5AR4 rectifier rather than the Deluxe's 6V6s and 5Y3, voice it with a normal and bright channel that can be jumped and mixed with a 'Y' cord, and design the circuit to respond dynamically with a guitar, enabling you to deftly roam between cleaner tones at stage volume and sweet over- driven distortion and sustain, all from the volume pot on your axe. Add exceptional tubes, a rock solid pine box, and for just $1,595 you've got a bread & butter rig Now, before you consider calling to ask if it's really that good... yes, it's really that good. Best of all, there is no better or more transparent platform than the Buster for further honing your tone with optional speakers and tubes... The buster is loaded with a Celestion G12H30 matched Ruby 6L6s, Sovtek 5AR4 and 2 EH12AX7s

FEATURES

ModeL Buster • Power Output: 27 Watts • Speaker: Celestion G12H30 • Speaker Load: 8 Ohms • Classification AB1 • Fixed Bias • Controls Two Volume 1 Tone • Four Inputs • Tubes: 2 STR 6L6s, 1 12AT7, 1 12AX7s, 1 5AR4 • Height : 16 • Width : 20 • Depth : 8 1/2 • Weight : 30 lbs

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AMPLIFIER

Two-Rock

Two Rock EXO-15

TYPE: Clean, Head, Single Channel

MSRP: $1,295

Legendary Two-Rock cleans in a streamlined, low wattage package. Hand wired, point to point excellence from the boutique amplifier performace leader. Unique exoskeletal design locates key performance components at the top and bottom of the chassis, for sleek tonal perfection. Delivers breakthrough transparency relied upon by leading artists like John Scofield.

FEATURES

Treble, Mid and Bass tone stack. Passive effects loop – Pre-amp in/Power amp out. Contour control. 4, 8, and 16 OHM speaker outputs. Lit controls on front panel. Size: L-12" x W- 8" x H- 7" Weight: 13.5 lbs. Tubes: 2 x 6V6, 1 x 5AR4 Rectifier Tube, 2 x 12AX7 Colors: Blue/White, Brown/Tan, Black/Grey.

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PRODUCT SPOTLIGHT

Ibanez TSA30

TYPE: Clean , Medium Gain, Combo

MSRP: $799.99

Ibanez Tubescreamer amps can create natural clean sounds, fat crunch tones, and even warm smooth overdrive tones with the modified Tube Screamer circuit built right into the amp.
The new TSA30 30W Tube Amp features a full 3 band EQ and seperate volume and gain controls for distortion at any level. Pre amp distortion, power amp distortion, Tube Screamer distortion, It's all in there.

FEATURES

- 30W All tube combo
- 1x12" Celestion Seventy80 Speaker
- 2 x 12AX7(Pre)
- 2 x 6L6(Power)
- Genuine Tube Screamer circuit built into the front end

CONTROLS

- Tube Screamer - Level, Gain, Tone
- Amp - Gain, Bass, Middle, Treble, • Volume
- Footswitchable Tube Screamer
- Footswitchable 6db boost

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AMPLIFIER

Carvin Steve Vai Legacy 3 100w Amp

CARVIN

TYPE: Clean , High Gain, Medium Gain, Multi-Channel, All-tube 3-channel

MSRP: $899

The Legacy 3's circuitry combines the best elements of Vai's previous amps, in a compact 100w chassis. The Legacy 3 is rich with smooth and warm harmonics on the clean and 2 drive channels. Channel 3 adds a gain switch that is a warmer high-gain setting that responds well to both humbuckers and single coil pickups. The master volume does not change the gain level of each preamp. Each channel's gain settings are maintained when the master volume is turned down. The variable boost is accessible from any channel for solos or to help boost lower output pickups when switching guitars in a live setting. The amp is driven by 12AX7 preamp tubes and EL34 power tubes. 2 effect in/out loops offer connection to outboard effects as well as the ability to patch into a 2nd Legacy 3 head's power amp for true stereo amplification. MIDI is also offered for channel switching, reverb assignment, boost assignment and internal LED color assignment.

FEATURES

- All-Tube, 3 Channel 100w Amp
- Rackmountable
- lightest 100w in the industry
- Master Volume
- Foot switchable boost
- Ch 1 Clean Channel
- Ch 2 Drive Channel
- Ch 3 Drive Channel with high-gain switch
- Ch assignable Reverb
- 2 Effect Loops: 1 pre master & 1 post master
- MIDI In/Thru
- Red/Amber/Green backlit LEDs color changes with channel

- Output: 100/50/15 watts
- Output Imp: 4, 8, or 16 ohms
- 12AX7 preamp tubes
- 4 matched EL34 power tubes
- Optional Vai green
- Dimensions: 17" wide x 9"" deep x 8.5" high
- Weight: 29 Lbs (13kgs)
- Made in USA

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